

RURAL
WORLD

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COLMAN'S RURAL WORLD.

NORMAN J. COLMAN,
LEVI CHURCH, EDITORS.

Published every Wednesday, in Chemical building, corner of Eighth and Olive streets, St. Louis, Mo., at one dollar per year. Eastern office, Chalmers D. Colman, 320 Temple Court, New York City. Advertisers will find the RURAL WORLD the best advertising medium of its class in the United States. Address all letters to COLMAN'S RURAL WORLD, Chemical Building, St. Louis, Mo.

To double the circulation of the RURAL WORLD annually is an ambition of the Publishers. It requires new subscribers to do this, and in order to secure them, every present subscriber is constituted an agent to assist in that effort. The price of the RURAL WORLD is one dollar per year, which is cheap, considering the quantity and quality of the matter and paper used, but to accomplish our purpose we will allow every subscriber to send a new name with his own for one dollar, and he may add additional NEW names at fifty cents each, which is less than the actual cost of the paper. Renewals in no case will be received for less than one dollar unless accompanied by the name of a new subscriber.

There are millions of people within easy reach of Buffalo who have not yet seen the beautiful Pan-American Exposition. This wonderful creation is now to fade away, to be preserved only in memory, but such a remembrance should brighten the reminiscences of every resident of the near-by states. It is too bad to see such a beautiful aggregation of things useful and things ornamental so soon destroyed forever. If the people of the country realized the value of such an opportunity at its true worth, they would not be standing room sufficient to accommodate the crowd that would attend.

THE AUDUBON SOCIETY OF MISSOURI.

The ruthless destruction of our feathered friends, the birds, has caused such an increase of insect pests to the great detriment of grain, fruits, flowers and vegetable life that the farmers of the state should be interested in the organization of the Audubon Society of Missouri because of the pecuniary interest to them, if for no other reason. The object of the society is as its motto, "Save the Birds," indicates. We are glad to note that from all ranks in life are the vice-presidents chosen, among them being the senior editor of this paper, Gov. Norman J. Colman. The aim of the society is most laudable and should have the hearty support of our best citizens. Address August Reese, Secretary, 2516 North Fourteenth street, St. Louis, and he will furnish you full particulars as to membership and other information desired.

SORGHUM SIRUP MANUFACTURE.

A Farmers' Bulletin (No. 135) by A. A. Denton bearing the title Sorghum Sirup Manufacture, has been recently received at this office. Sorghum makers who have been reading on this topic know that a bulletin from Mr. Denton on this subject will contain much that will be helpful. The value of this publication will be found in the consideration of the subheads under which sorghum is treated. They are in part as follows: Soil and Climate as Affecting Quality of Sirup; Varieties of Sorghum Suitable for Different Localities; Planting, Cultivating, Harvesting, Grinding, Cane, Clarification, etc. The Clarification of sorghum is most comprehensively discussed. The illustrations are very fine and greatly aid the reader in getting a fuller understanding of machinery used in the various processes. This treatise has a special value because it contains the history of expert mental work by Mr. Denton which he has been for many years studying. Let our readers who are interested in making sorghum send to the U. S. Department of Agriculture for Farmers' Bulletin No. 135. They will find in it much valuable information.

DEMANDING EXPERT KNOWLEDGE.

In looking over the list of judges at the various state fairs, one is impressed with the many professors and agricultural college graduates who have acted in this capacity. It is an acknowledgment of the value of systematic training along agricultural lines. Farmers are demanding that their live stock, their dairy cattle and products, their horticultural exhibits shall be judged by men who know these products of the farm. Many an intelligent farmer who is desirous of improving the value of his stock or grains enters them at his state fair that he may know if he is developing a good herd of cattle, or growing a marketable grain that will receive the best market price. Dairyman many times have better scored that is not to compete for a prize, but they are anxious to know wherein their butter is not up to the notch.

Men who take this pains want accurate information, and third-rate judges will not be tolerated. Such progressive farmers solicit the private, personal criticism of the judge on their products. Only those who have availed themselves of this means of education can estimate its full value. But men who go to such expense to obtain information want to

feel assured that the judge understands his business. It is really most encouraging to have farmers make such demands. It augurs well for our agricultural interests. It also means that more of our farm boys will be given the benefit of agricultural training.

FARMERS' INSTITUTES.

The extreme weather conditions which prevailed during the growing and harvesting season of the crops of this first year of the new century have made farmers more than usually observant. Then, the decreased yields of the farmers' feeding crops of this Central West section have compelled farmers hitherto listless regarding some of the newer forage crops, to give them more careful study. How to feed them, what is the result of feeding such crops, and how to grow them, and similar queries are constantly being asked. The Farmers' Institutes are giving this subject a large place on all programs. Farmers should avail themselves of every opportunity to learn more on these and other topics of vital importance to the farm, and we are pleased to learn that the farmers of Missouri are awake to their privileges, as is shown by information sent us by Mr. C. D. Lyon, whom our readers have come to know so well, and who is one of the lecturers at these Institutes. He says:

"The second week of our institute work was a greater success than the first, although we have had good attendance at all points. The growing of legumes, the sorghum and clover are the favorite topics, but stockmen keep our veterinary surgeons, Drs. Luckey and Conway, busy answering questions. At several meetings there have been fine exhibits of fruits, grains and vegetables. And at one Laredo—there was a fine show of live stock of all kinds. At several points the citizens organized permanent institute societies to be ready for the work next season. The work is thoroughly appreciated by all and the closest attention paid the speakers."

THE FARMER'S LIBRARY.

No class of people does more careful reading than do intelligent farmers, and what is still more important, none reflect more on the reading done. The solitude of farm life and work is conducive to thought. Now, as the evenings lengthen and active farm operations are lessened, reading is more and more being done. The style of reading that farmers delight in is seen in the character of the books in their homes. Few novels are found there. The books purchased are mostly on religious subjects or are histories or biographies with a few of the old standard poets. We regret that so many books of high price, but of little value, except for their bindings, find their way into these homes. These books are usually sold on subscription. The farmer and his family are far from bookstores, and the gift agent makes his book seem most valuable and the sale is made; while for the sum paid up, many times ten reliable and valuable books could be secured.

There are standard works of fiction that are wholesome and should be read. Reliable biographies should be found in every library. Of course, books pertaining to the varied departments of farm work will be much in evidence. The chief factor in collecting books is that they be by reliable authors. Many books are written so they will sell without regard to the value of their contents. If five or ten dollars are to be invested in books, be careful to get the best. For no more fatal mistake can be made than to provide spurious and inaccurate reading for a family. If a mistake is made in the purchase of breeding stock, much as it is to be regretted, the animal can go to the slaughter pen, but wrong mental impressions can never be wholly effaced. Use the most careful judgment in selecting books.

The State Department at Washington received from the United States Consul at Rouen, France, a report on the deficiency of France's wheat crop.

The Consul states: "France is disturbed at present over a deficient wheat harvest, a deficiency all the worse as the grain is very inferior in quality. Wheat has risen 45 cents per 220.4 pounds, and the price of a quarter-loaf of bread has already advanced from 12.5 cents to 13.5 cents."

"The annual consumption of France, including seed wheat, is 346,230,000 bushels. Subtracting from this the 23,380,000 bushels now in reserve leaves 317,850,000 bushels; deficiency between this time and the same time next year. How much of this the present harvest will supply is uncertain. M. Cornu, the general secretary of the National Association of French Millers, is reported as saying that he thought the crop might reach last year's figure—300,242,000 bushels—and that the reserve would be sufficient to provide for the 35,894,000 bushels deficit. But next year, he adds, unless there is a wonderful harvest, France will have to apply for breadstuffs abroad. In certain quarters, however, quite a different condition prevails. Some authorities say that this year's yield will not be over 232,314,000 bushels; others figure as small a supply as 246,900,000 bushels, and a deficiency to come from abroad of 90,330,000 bushels, the same as in 1897."

"Within the last decennial period three years have been especially deficient—1893 yielded only 275,286,000 bushels, 1897 246,900,000 bushels and 1899 269,342,000 bushels. "This constantly recurring is as logical as chronological. The varying mood of nature is not the only cause. The in-

creased development of manufacturing, the flocking of the peasants to the town and city industries, the partial belief that the country can buy wheat cheaper than it can raise it, the greater profits gained from growing beets for sugar and alcohol, the replacing, where possible, of wheat fields by vineyards—these are the processes that will some day, perhaps allow the profitable introduction of American wheat, if not flour, all over France.

"So strongly organized is the French milling industry that the importation of flour presents a serious difficulty. L'Association Nationale de la Meunerie Française was founded in 1885, with headquarters at Paris and at present it numbers between 4,000 and 4,000 members. So great is the capital invested in mills, and so strenuous are the efforts of this alliance against foreign competition, that since February 27, 1894, the tariff on flour has been about double that on wheat, which condition enables the French to import wheat, grind it and sell it cheaper than imported flour. While Paris and a few of the larger cities consume American flour, this giant internal organization, the excessive duty and Russian, Hungarian and other competition prevent the possibility of any general introduction thereof.

"The prospect for American wheat grows continually better. Against its importation there is no prejudice on the part of the mill owners. The residue of the wheat is in demand for domestic animal and the grinding of it gives employment not only to the mills, but to the many poor people who would go without work, if flour were imported instead."

FARMERS' INSTITUTES.

Editor RURAL WORLD: A few days ago a familiar sound, although not heard for a few months, came across the country, calling to mind the fact that the place is open where the training of the "young idea how to shoot" has begun. It is here that the young begin to learn the principles that will remain with them throughout life, hence the necessity of laying the foundation with care.

Although at all times I have an abiding interest in the education of the young, yet I feel that the growth and the older people of the farming class would be none the worse for having a few lessons. While reflecting upon this, here comes the RURAL WORLD, as if to strengthen my thoughts upon the farmers' education in announcing the Farmers' Institutes to be held in many places in Missouri. They are to be conducted by the best talent the state can produce. The subjects to be discussed will be those that most directly affect the farm. The bell sounds and the farmers' school commences for the winter.

In reviewing my own life and going over the "trail," as it were, of such institutes, I regret that such schools do not come more often and regularly with the increased attendance. They are like seed sown in rich soil. I am perfectly aware that there are those who think they know it all, and feel confident in their self-importance. They have farmed for many years, and their self-esteem is so puffed up, that such men declare farm lecturers are of no account, when farming in reality is to be the test. Such remarks, I am sure, will be noticed by the friends of the institute. They are like seed sown in rich soil. I am perfectly aware that there are those who think they know it all, and feel confident in their self-importance. They have farmed for many years, and their self-esteem is so puffed up, that such men declare farm lecturers are of no account, when farming in reality is to be the test. Such remarks, I am sure, will be noticed by the friends of the institute. They are like seed sown in rich soil.

It is the young men and young women who are being reared on the farms where they are known only the old-time farm practices that I desire shall have the results that come from attending farmers' institutes. It is the young that are generally found in attendance, at first as a matter of amusement, and later of interest as the topics relative to their work are discussed. In all likelihood the information gleaned will be put to a practical test the following spring. Then it, like the wedge, once entered is sure to be sent home. This may be termed the experimental stage.

At the next institute, these young men feel some assurance and are prepared to ask questions for further guidance. Experiments are extended until "grand-pa's" farming becomes somewhat limited. The observer from the train or carriage on the highway can notice the improvement in crops and stock. The farm and house will have conveniences and comforts and even the apparel of the farmer, his wife and family will be more genteel.

Who can say that the opportunity or the chance for the advancement of the farmer boy is a myth? Indeed, at times, I am inclined to believe that the chance for the improvement of the mind and the farm is wantonly ignored. If the farm boy prefers the chance for the stiff collar, the fashionable dress and shiny shoes, the sooner he leaves the farm for parts more favorable for his tastes the better.

The demand for our products both at home and in foreign markets is continually being made more evident. The lecturers at the Missouri farmers' Institutes are men of ability, as shown by articles previously contributed to the RURAL WORLD. Mr. C. D. Lyon, I knew (not personally) many years ago in Ohio as an up-to-date farm writer. His hearers will, I am confident, be well paid for their time while hearing his addresses. The subjects to be discussed cover a wide field, and can but be of benefit to all who may avail themselves of the opportunity presented.

JOHN BETHUNE.

Lancaster Co., Neb.

FARMERS' INSTITUTES.

Editor RURAL WORLD: The first series of Farmers' Institute meetings, as announced in a previous issue of your paper, has been going on now for two weeks with splendid success. Interest in these meetings is manifested among the farmers far in excess of our highest expectations. Two or three meetings have been reported where not less than fifteen hundred to two thousand people were present. The second series of meetings will begin at Bunceton, Cooper county, on October 14, and from that time on two corps of lecturers will be employed and four meetings will be held daily, two in each series. The list of dates for the second series is as follows:

Bunceton, one day, October 14.
Pilot Grove, one day, October 15.
LaMonte, two days, October 15 and 16.
Holden, two days, October 16 and 17.
Freeman, one day, October 17.
Green City, one day, October 18.
Osceola, two days, October 18 and 19.
Merwin, one day, October 19.
Metz, one day, October 20.
Walker, two days, October 21 and 22.
Appleton City, two days, October 22 and 23.
Windeer, two days, October 23 and 24.
Leeton, one day, October 24.
Deepwater, one day, October 25.
Oscarola, two days, October 25 and 26.
Flemington, one day, October 26.
Nichols, one day, October 26.
Mt. Vernon, two days, October 28 and 29.
Granby, two days, October 29 and 30.
Marshallfield, two days, October 30 and 31.
Conway, two days, October 31 and November 1.

Lebanon, two days, November 1 and 2. Meetings will be held at Richland, Dixon, Montclair and Iberia, the exact dates not yet fixed, but will be announced next week and will follow immediately after the Lebanon meeting.

G. W. ELLIS, Secretary.

Columbia, Mo.

AUTUMN DAYS AT SEVEN PINES.

Editor RURAL WORLD: Pleasant indeed are the days of early autumn, when the warmth of summer and the coolness of winter are blended in a sweet medium of temperature. We are out of the wilderness of high degrees, and have taken positions in the observatory car where a variety of pretty views present themselves as the journalistic train sails across the Flood Plain, the Hill country and the prairie ocean. This is an average good world.

SEEING IS BEST—I have just returned from a trip through our county extending from the extreme northeast to the county line along the southwest. The land is greatly redeeming itself from the effects of summer heat, and conditions are improving. Especially is this applicable to meadows and bluegrass pasture, for the land has now a uniform of green plant life, fresh and bright. In general the farmers of the county will come up with a fairly successful yield of the main products. In regard to fruits I was surprised to see the encouraging displays of apples and the good percentage of peaches. In the apple line, our friend Ben Davis holds first rank in grades of amount and quality. Peaches were of considerable importance. Positively the greatest failure is credited to the potato. The native apples, the so-called crab varieties, are a success this year. I think a tree or two of wild apples are an ornament to the farm home.

I noticed a number of stacks of hay of that terrible yellowish-brown rank of two years ago. This is poor policy, as time removes sweetness and virtue from corn and hay. Then, again, the practice is of the miser-type.

As to sorghum sirup, the yield will be about two-thirds of an average. On one farm I noticed a thirty-acre field of the common sorghum cane, and during my journey I saw a half-dozen places of sirup processing. It is quite an achievement to manufacture a real good quality of sorghum sirup, and conditions are governed largely by the varieties of cane, season, and the percentage of sweetness.

A HAWK CONVENTION.—Everything has its day, is a maxim. Wednesday and Thursday, September 25-26, were hawk days here in east Clark county, and great were their exhibitions. The first display passed near Seven Pines on Wednesday between nine and ten. This course of Buteos were flying in circles representing the cyclonic and anti-cyclonic directions, as the weather man would say; and their progressive movement was toward the northwest. The advance was at the rate of eight or ten miles per hour. Next day, while going through the county some ten miles west of home, the second display of the hawk congress was observed, and this time the birds were moving southward. One division numbered 45 by count, and the total number may be recorded at 100. They were all of one class, the large red tail hawk, Buteo borealis.

IN BRIEF.—During my journey across the county I noticed that of the evergreen trees the arbutus suffered most by the drought. On a front yard a large Scotch pine was partially dry from the heat of July. Trees and other forms of vegetation were injured from the excessive and prolonged heat, rather than from the dryness of the earth. Some of our farmers are turning from wheat and are taking up rye. They are doing so pretty vigorously this autumn,

and especially so where pasture is wanted.

As crop conditions improve, and products are being received from other states, prices of articles here are lowering and leveling.

Corn shredders are coming into use here in Clark county. Gold is scarcely sufficient to enable farmers to keep up with the machine procession. Diamonds are necessary.

JASPER BLINES.

Clark Co., Mo.

OKLAHOMA NOTES.

Editor RURAL WORLD: Since my last we have had a fine rain here. It proved to be, though, local, as persons residing a few miles west of us complain of not getting enough. We have sufficient moisture to bring turnip seed up and keep the turnips growing. Late potatoes are also coming up and doing well. We hope to have a fair crop of each yet.

Farmers are busy sowing wheat for pasture this winter. Some are sowing on corn land and turning under; some are sowing on stubble and turning under, while others are breaking the land, sowing broadcast and running the disc over it. I suppose none who are sowing wheat will allow it to mature, but will in the spring turn under and plant to more valuable crops, as this is not a wheat country.

In this respect the prairie farmer has somewhat the advantage of us, but we have the upper hand in vegetable and fruit crops. I do not believe they have any the advantage in raising corn.

Stock generally looks well and most farmers seem to be holding to their stock, which is well. While corn is only about one-third of a crop, there has been a great deal of roughness saved. This, with the wheat pastures, will certainly carry us through all right. We have an excellent mast crop this year for our hogs if we were only ready to turn on it, but not having our pasture fenced hog proof yet, we will have to wait a while longer.

We lately received a catalog from Kitson Bros., Des Moines, Iowa, advertising the Duplex Automatic Ball Bearing woven wire fence machine. We wish to fence our place with a hog proof fence as cheaply as possible, and a brother informed us that this method was the cheapest and best, and has shown his entire conviction of its worth by purchasing a machine a few years back. He fenced his own place and also several for neighbors. But it seems that the price of wire fluctuates so much that we just now are in a quandary whether it will be cheaper to buy a machine and enough wire and make our fence, or to get the woven wire ready to put on. Either one is high enough just now for a poor man's purse, and we are simply compelled to protect our crops from the other fellow's hogs or have trouble. A good fence makes good neighbors and brings smiles instead of frowns. Will some person who is informed along these lines tell us which to choose, and also what firm to patronize in purchasing wire, either smooth or woven?

Cotton picking is in order of the day here now. Being a large acreage planted, much of the soil being especially adapted to its growth. It is bringing 2 1/2 cents in the seed. It makes "ye scribe" kinder wish we had got our seven-acre piece planted.

Yes, "Western Reader," I believe I know you, too—one guess—is Emma or Daisy? Be sure and come again. I enjoyed your article very much and wish I could see the real scribe in person. Just come on with your vegetables, but I will say in advance, if you want to see prize winners, just come and look in the "pot" and you will smile.

Well, the "gude mon" has come in from work and I'll beat a hasty retreat to the kitchen and "fix" his supper.

Supper over, work all done, and here I am begging a little more space to say I am so sorry Judge Miller became unable to remain longer at the Pan-American Exposition. His notes from there are very interesting. I trust he will soon be well.

Where is Idyll? Please come again and tell us how time has dealt with you since we heard from you. And where, O, where, is Mr. Heaton? Come back off your circuit and tell us of your "do-in's."

It is time you were sending your photo. We are anxious to see how the Methodist parson looks.

Ina May, you are quite handsome. I fail to see one thing wrong with your shoulders, but I'm struck with that intelligent face of yours. Your husband may be all you say of him, but surely he can't outlive you. Yes, I'm going to stop this right now.

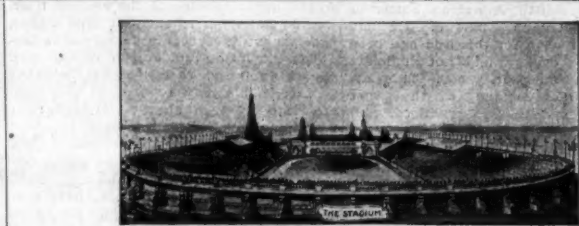
MRS. A. GREENER.

Cleveland Co., O. T., Sept. 25.

NOTES FROM THE CLIFF.

THE WEATHER SITUATION.—After the local showers at the last of August, the drought continued unabated until the evening of Oct. 1, when a storm of electricity and rain swept over this region, but only sufficient water fell to dampen the surface of the ground and cool the atmosphere. Since then the nights have been cool and the days warm at midday.

THE LATE CROPS.—The large acreage of turnip seed sown just after the local showers in August failed to germinate, consequently those turnips "to burn" are a failure. Many sowed rye and



STADIUM AT THE PAN-AMERICAN EXPOSITION.

grass seed for late pastures, but it was just that much wasted labor—there now no pasture whatever. But little buckwheat was sown and that was mostly a failure and buckwheat cakes and sorghum molasses will be very much of a luxury this winter.

THE OKLAHOMA COUNTRY.—We recently drove through the country in a northwesterly direction for a few miles and were soon in the region ylepeled "Oklahoma." For miles and miles it is a vast stretch of timber, underbrush and thicket, broken and hilly, interspersed with clearings, where the habitations of the people are erected and the land cultivated in corn. They usually raise good crops, especially on the bottom land, this year being the exception to the rule, because of the drought, and yet, they will stock quite early, which is a large area of the country to the west. In Fayette county, is denominated "The Nation." Hunting is the chief industry, and scores of dogs abound. They subsist mainly by hauling railroad ties and wood to the neighboring villages, while some depend mostly on the crops produced. Some are very rough in appearance and manner and rather illiterate. Just why it bears the sobriquet of "Oklahoma," we fail to understand, for there is no similarity whatever between it and the Oklahoma of the West.

DYPE.

Effingham Co., Ill., Oct. 5.

PULASKI COUNTY (MO.) NOTES.

Editor RURAL WORLD: The drought has been very severe in this county, and a few of our farmers sold off a good deal of their stock quite early, which should have been kept, as the catch crops which our farmers succeeded in getting planted after the July showers set in, have furnished a good deal of feed, especially the late corn, which will require from the tenth to the middle of October to mature. Should the killing frosts keep off that late it will make an abundance of feed for those who had the pluck to strike at the right time. Some good corn has been cut in favored localities, but the most of the early planting is worth but little more than for fodder. The wheat crop was good, but all that is not used for bread will be fed in our own county. The peach crop is unusually heavy, but apples and vegetables we will have to do without until another year.

Our county is making a gradual advancement in education, religious living, good farming and I may add that many good cattle, mules, hogs and sheep go to market from this county.

Will some of the many readers of the RURAL WORLD who know inform us through the columns of your paper as to whether corn is killed by frost while yet in the mill is safe to feed to horses?

A. R. BAILEY.

Sept. 2.

MISSOURI CROP REPORT.

By the Missouri State Board of Agriculture.

CORN.—Our correspondents report a continued improvement in the corn crop for this month in most counties. It is not the state. The state shows a gain of five points for the month, the northeast gaining 10, the northwest 4, central 4, southwest 2 and southeast 4. Some damage is reported on account of frost on September 18 and 19, but the greatest damage was probably on the fodder, as the bulk of the corn was out of danger. A great deal more of the fodder has been saved than for the average year, and a number of new silos have been put up. Eighteen counties in the state report 50 per cent or more of an average crop; six of these are in the northeast, four in the northwest, three in the central, one in the southwest and three in the southeast. The average for the state is now 52, which indicates a probable yield of approximately 80,000,000 bushels. Considerable of the corn will be of rather poor quality.

WHEAT.—Seeding has progressed favorably in most sections and an increased acreage will be sown. In a large majority of places the ground is in excellent condition and considerably more than half the crop is now sown. In a great many counties an increased amount of commercial fertilizers has been used. In a few counties, however, the ground is too dry for the seed to germinate.

COTTON.—The condition of the cotton crop in southwest section is 47, compared with 45 one month ago, and in southeast is only 55, compared with 68 September 1. The average for the state is now 52, which indicates a probable yield of approximately 80,000,000 bushels. Considerable of the corn will be of rather poor quality.

TOBACCO.—This crop has improved 16 points during the month, the condition for the state now being 56.

APPLES.—The apple crop is now made and the crop has improved 5 points during the month, condition for the state 50; northeast 42; northwest 38; central 54; southwest 50 and southeast 56. Apples

are generally well colored and of excellent quality, but not very large. HOGS.—The number of hogs in the fattening pens compared with 1900 is placed at 42 per cent. Forty-four counties in the state place the number at 50 per cent or more. Twenty-six counties place the number at 25 per cent or less, the lowest being only 5 per cent. Nine counties place the average above 70 per cent. Two counties only as high as 90 per cent.

CATTLE.—The number of cattle being fed compared with 1900 is 37 per cent. Eighteen counties report 50 per cent or more, which is exactly the number of counties reporting 50 per cent or more of a corn crop. Eight counties report 30 per cent or more, the highest being 38 per cent. Thirty-eight counties report 25 per cent or less. The sectional averages are as follows: Northeast 38; northwest 31; central 27; southwest 15; southeast 37.

PASTURES.—The rains that have fallen in many counties have greatly improved the pastures, the condition is now 37, compared with 31 one month ago.

This report is the last for this year except that a final estimate of the yields of all the crops will be made November 1.

GEO. B. ELLIS, Secretary.

Columbia, Mo., Oct. 4, 1901.

MISSOURI CROP NOTES.

SCOTLAND CO., N. E. MO.—The corn crop improved some after the drought was broken. Nearly all the crop was cut. It is better than people expected. Wheat little wheat we had was good and yielded well. Oats were almost a failure—very few were threshed. Some that were made 10 bushels per acre. There is very little tobacco, few apples, but a good crop of peaches.

R. C. HOLLEY.

Oct. 4.

HARRISON CO., N. W. MO.—The drought is a thing of the past, and the meadows, pastures and wheat fields are green and making rapid growth. Wheat is being put in in fine shape. One firm has more corn than was expected. Plenty of feed for stock. We are short on potatoes and other vegetables. Weather is warm and showery, but we need heavy rains to fill up creeks and stock ponds.

FRANK P. BURRIS.

Oct. 4.

POLK CO., S. W. MO., NOTES.

Editor RURAL WORLD: These are busy days with the Polk Co. farmer. Wheat sowing is in full blast, and wheat drills are in great demand. One firm at the county seat has sold 37, other firms have likewise made large sales. It seems as though everybody was going to try and raise wheat. The ground is generally in fair condition, but it is very dry. It is our candid opinion that wheat raising is losing our farmers money year after year, as the ravages of the chinch bugs in the corn fields more than offset the profits in wheat raising. It looks now as though one or the other must be discarded. If one must go let it be the wheat, for corn is king, and when corn can no longer be produced the Ozark farmer is on the road to bankruptcy. Late corn would certainly have made at least half a crop this year had it not been for the bug. As it is, many fields will hardly pay for gathering. There has not been a crop of corn raised in these parts for several years but has been damaged more or less, and as the wheat area increases we may expect the bugs to become worse.

Another objection to wheat raising is the expense. First there is the \$40 drill, then the \$125 binder, and lastly the \$2,500 threshing. All this expense falls on the wheat grower. It certainly doesn't pay to raise wheat when the cost of production exceeds the market price. It is all very true we had dollar wheat the spring of 1898, but the year before here and in many parts of the world, there was almost a total failure of the crop, and wheat was highest instead of selling we were buying flour. So it is plain to be seen we lost by the boom. Since 1898 prices have tended downward and last July when it looked as though the corn crop was ruined and wheat would be the only grain for man and beast, yet wheat sold around 50 cents. When crop conditions become as favorable as they were in 1896 and 1898, we confidently assert that wheat will sell at 35 cents and perhaps lower.

We would caution the farmers of the Ozark hills to go slow and let the farmers of Kansas and Oklahoma raise the wheat. What we need is more corn, more clover and more cow peas, and then we can keep more live stock, pay off more debts and buy more of the comforts and luxuries of life.

The supply of stock water is gradually diminishing. The rains that we have had so far have not increased the supply.

WM. A. ERWIN.

The Dairy

DAIRY CATTLE MEN.

The dairy cattle men at the Pan-American Exposition met on Friday night, September 29, at the New York State Marble Palace. Many prominent stockmen from different parts of the country were present and the meeting which followed was one of exceptional interest.

Edward VanAlstyne of the Exposition Model Dairy, acted as chairman, and the meeting was opened by Mr. Converse. Every important breed of dairy cattle was represented at the meeting by someone who is especially versed and interested in it. In particular line, Chairman VanAlstyne called first upon Mr. Gregg of Minnesota, who gave an interesting talk on what should constitute the good points of the dairy sire and the dairy cow. He elaborated on the necessity of bringing out strong constitutional points to support the important dairying elements, and that they should be bred for health, strength and dairy qualities and not be allowed to run to beef.

Mr. A. R. Eastman of Waterville, N. Y., gave his experience in the English markets and commented on the fact that he found very little American butter or American cheese in England. He inquired the reason for this and had been told that the dealers had not sufficient confidence in American goods. This Mr. Eastman thinks is due to the vast amount of fraud that is practiced, and he further drew a parallel between the methods of doing business in the United States and Canada, and made the point that our Canadian friends make goods that will stand the test, that their dairy industry is based on future prospects, while Americans work for the greatest possible immediate profit.

Prof. Dean of the Experiment Station at Guelph, Canada, indulged in a few pleasant remarks at the expense of his United States friends, and then gave an entertaining talk on the manner in which the work was carried on in their Experiment Station. In his opinion a cow that does not yield 6,000 pounds of milk or 300 pounds of butter per year should be gotten rid of. He had obtained the best results from heifers raised on the premises.

Mr. C. M. Winslow of Brandon, VT., secretary of the Ayrshire Breeders' Association, spoke of the importance of breeding a distinctly dairy type of cattle with the ability to perpetuate their breed. He spoke disparagingly of judges who award blue ribbons to dairy cows that have a preponderance of beef.

Mr. Hoxie of the Holstein Breeders' Association thought that there was plenty of room for the different breeds, and that they were all valuable, and if we had a few more we would profit by the additions. He claims for the Holstein great vitality—the strongest in fact of any breed. He compared vitality with power, the two terms being, in his estimation, synonymous. He made no distinction between vitality and constitution, as a good constitution enables a cow to make great records and to withstand severe climatic changes, in which case he thought the word hardihood was but another term for vitality or constitution. He recommended Holstein milk for family consumption for the same reason that the strong, vigorous, healthy constitutions enable the cows to furnish the best possible milk. The last advantage claimed for the Holsteins was beef value, which he thought was considerable.

Mr. Winslow spoke again, giving a history of the Ayrshire for 160 years in Scotland, where from necessity the Ayrshire cow had often endured severe cold, got her living on the moors wherever she could find anything, and support her owners. Weighing about 600 pounds, she is considered a medium size, which for dairy purposes is eminently superior. They are always hungry, will eat all you feed them and make the best use of all they get. The quality of Ayrshire milk is good. It is particularly adapted for the milkman when there are so many milk inspectors about. The Ayrshire has never been advocated as a butter cow but wherever she has been given a trial it has been found that she produces a large quantity of good butter at a small cost. While the cream will not rise so quickly when the milk is set, that objection vanished into thin air when the cream separator was invented. Though not advocated for beef, the butchers like it, as they are thick in the loin and cut up well, and has a good flavor. A persistent milker she has no equal. There is, in fact, some difficulty in drying her off. He thinks the Ayrshires give the best results for the least outlay.

Charles A. Hills of Rosendale, Wis., represented the Guernseys and gave a brief history of their importation into this country, stating that not until 1870 was there any great number of Guernseys in the United States. He pointed with pride to the Guernsey record at the World's Fair, as well as the Pan-American Model Dairy, as demonstrating their capacity for producing a large quantity of exceedingly fine and highly colored butter as well as the net profit derived therefrom above the cost of their keep, he mentioned especially the high color that seems to carry with it a very fine flavor.

Mr. Clinton D. Smith spoke briefly on the questions that are being studied with interest at experiment stations in regard to breeding, of which very little is really known. He also elaborated some on the value of good sanitary conditions, the necessity of reliable health and the particular manner of feeding.

HENRY E. ALVORD, Chief of the Dairy Department, Bureau of Animal Industry, upon leaving the Pan-American Exposition, complimented Superintendent Converse in the highest terms. He mentioned the fact that he had visited all recent exhibitions and examined the animals shown, but in no case had he met with such a fine collection of cat-

tle. Mr. Alvord was at the Pan-American for the purpose of securing photographs of representative animals to illustrate an elaborate work for the government. Three hundred photographs secured for this purpose, which undoubtedly furnish the finest collection of the kind ever made.

MODERN STABLE CONSTRUCTION

No. 4.

Written by Herbert Shearer.

CONSTRUCTION.—In stable construction the question of sanitation is comparatively new. Advanced stockmen have for years recognized the value to animals of plenty of fresh air without knowing exactly why.

In this series of articles, describing the experiments of Mr. F. A. Converse and his illustration of good dairy work at the Pan-American Exposition, it is my intention to explain this why, and to show how a cheap, effective, sanitary stable may be built. In former articles I described the proper location for a sanitary stable and the manner of constructing a foundation and floor for the same. This article will describe the proper construction of a stable from the wall up.

We have built a wall from below frost to the upper surface of the cement floor. We do not wish to carry it any higher, because a difference in temperature between the inside and outside of the wall causes dampness to collect on the inner surface. This may be seen in the form of white frost in almost any cellar or root house during the winter season. It is also noticeable in stables under bank barns, and this is one of the great objections to this class of stables.

The stable should be built entirely separate from the barn although it may be connected therewith at one end for convenience in feeding. It may be connected with a silo for the same reason. The stable building should be of light construction, only one story in height, and in no case should storage be provided overhead. The building should be constructed practically air-tight, but fresh air should by no means be shut out.

Commencing with the top of the wall, a six inch square, should be embedded in fresh cement mortar. Stud-ding, 2x6x8 feet long are placed thereon, three feet apart; toenailed into the sill with a 2x6 plate, spiked on top; the stud-ding carefully placed and plumbed, especially where the doors and windows come.

Building paper must be used both inside and outside of studding, thus making a six-inch dead air space, which is the most satisfactory non-conductor of heat or cold. This paper may be protected with cheap or expensive boarding at the option of the builder. If the paper be carefully put on it will provide the necessary air space without respect to the quality of the lumber used. Selslag should be let on the paper at all openings, sufficient to reach the window and door frames, which should be made just wide enough to fill the space between the flush sides of the inner and outer boarding; the paper nailed to the frame edges, an extra strip of paper put over this which is in turn covered with the casing and all nailed down tight. The same care should be taken where the joints are made around air flues, at the plaster and sill, and especially where the wall paper joins the ceiling paper. Careless workmen will need watching at such places. It is the numerous little details that determine the value of the stable when finished.

To secure proper warmth and ventilation a ceiling is provided 8½ feet above the floor. As a stable should in no case provide for storage overhead the ceiling may be very high. Joists 2x6 inches placed three feet apart, will be heavy enough for almost any stable, no matter what the size may be, as it is supported by the gas pipe uprights that hold the cow chains and the wire partitions in place.

The ceiling joists are spiked to the plates and rafters thus forming ties to strengthen the building. Building paper is tacked to the under side of the joists, and matched, ceiling nailed on below the paper. This ceiling may be of seven-eighths inch stuff or thinner. Care should be taken to lap the ceiling paper with the paper from the side walls to leave no space for the admission of air. All inside wood work should be dressed and free from any beading or projection so far as possible; this is to prevent the lodgment of dust, which is one of the main things to be carefully guarded against.

Window stools should be made so narrow that they will not become the receptacle for curry combs, brushes, old bottles and other trash that are so instrumental in collecting dust and other dirt. Equal care should be taken with doors. Door frames are made and fitted the same as the window frames with the exception of the sill. This is made narrow and rounded so that the door will shut tight against it without a jog or jamb, for the accumulation of dirt. There is no objection to having the sill eight inches high, as the cows easily step over it and the manure carrier is suspended from the ceiling.

The roof should be comparatively steep as a window less than one-third pitch is too short lived if covered with shingles. The size of rafters will depend on the size of building, though generally speaking 2x4 placed two feet apart for a rafter, up to 12 feet in length, is strong enough for one-third pitch or steeper.

The matter of windows requires careful consideration. They should be large enough and numerous enough to admit plenty of light and sunshine when required, but not sufficiently large to produce by radiation too great changes in temperature. If possible, sunshine should be admitted into every corner of the stable. For this purpose and to prevent unnecessary radiation of heat at night and during cold weather, it is better to have the necessary windows so far as possible on the south or southerly side of the building.

A window should be provided in each gable end. These windows should work in grooves to slide easily up or down as required with rope attachment that may be opened or closed as required. Reference should be had to the cuts for detailed instruction in the matter of placing ventilators, registers, ventilating shafts, etc. (See article No. 3 in RURAL WORLD of August 14, second page.)

While the drawings show a stable with two rows of stalls, one on either side, single stalls with one row of stalls may be built from the same design; in that case, of course, the building would be but little more than one-half the width. The design of these articles has been to accommodate the small farmer with one-half

PAN-AMERICAN MODEL DAIRY.

Report of the Test, Giving Totals of Each Herd Complete From the Commencement of the Test May 1 Up to and Including the Week Ending September 17, 1901.

Name of Herd.	Am't. of Butter.	Value at 50c.	Value at 55c.	Value at 60c.	Value at 65c.	Value at 70c.	Value at 75c.	Value at 80c.	Value at 85c.	Value at 90c.	Value at 95c.	Value at 1.00.	Total.
Holstein	304.9	152.45	157.25	162.05	166.85	171.65	176.45	181.25	186.05	190.85	195.65	200.45	1,956.85
Short-horns	207.7	103.85	107.65	111.45	115.25	119.05	122.85	126.65	130.45	134.25	138.05	141.85	1,344.85
French Canals	200.5	100.25	104.05	107.85	111.65	115.45	119.25	123.05	126.85	130.65	134.45	138.25	1,304.85
Guernseys	222.3	111.15	114.95	118.75	122.55	126.35	130.15	133.95	137.75	141.55	145.35	149.15	1,404.85
Ayrshires	237.0	118.50	122.30	126.10	129.90	133.70	137.50	141.30	145.10	148.90	152.70	156.50	1,464.85
Pooled Jerseys	164.7	82.35	84.15	85.95	87.75	89.55	91.35	93.15	94.95	96.75	98.55	100.35	964.85
Jerseys	217.6	108.80	112.60	116.40	120.20	124.00	127.80	131.60	135.40	139.20	143.00	146.80	1,384.85
Dutch Belts	192.8	96.40	99.20	102.00	104.80	107.60	110.40	113.20	116.00	118.80	121.60	124.40	1,204.85
Red Polls	240.8	120.40	124.20	128.00	131.80	135.60	139.40	143.20	147.00	150.80	154.60	158.40	1,504.85
Brown Swiss	256.8	128.40	132.20	136.00	139.80	143.60	147.40	151.20	155.00	158.80	162.60	166.40	1,564.85

dosen cows or the stock man with fifty or any number between these figures. For a double stable, if long, the 2x6 inch plates should be doubled, though a single two-inch plate properly supported by the boarding, both inside and out, makes a very strong building, so solid, in fact, that the plate may be cut away to make room for the ventilators without any appreciable weakening of the structure.

With a building put up in this manner and furnished with dry scarves, dark blinds, double doors and double windows, with all properly and carefully fitted, we have a stable which may be shut up practically air-tight, and one that would be a very unhealthy place for animals unless provided with a good system of ventilation.

(To be continued.)

MILK TALK.

The circular printed below issued by the Bereman Farm Dairy Company for distribution among their customers, contains so many points of interest to both producers and consumers of milk that we think it well worth publishing in full in our columns.

Let us have a little plain talk about milk. MILK AS FOOD.—Milk is a perfect food. It is nature's own. It contains in right proportions all the useful elements to sustain life and promote health. It is both food and drink. We are talking now about good milk. Bad milk is the worst food man can use.

COMPOSITION OF MILK.—Normal cow's milk is composed of the following: Water 88.39 Milk sugar 4.39 Casein (cheese) 3.39 Fat (butter) 4.00 Ash (salt, lime and other minerals) 0.70

FOOD VALUE OF MILK.—Never forget that it is the "milk solids"—the sugar, cheese and fat—that nourish, and furnish animal heat and muscular energy. They constitute the fuel of the human machine. They also supply nourishment for the fatty tissues of the body. The casein or cheese element supplies nourishment for the muscular tissues. All muscular tissues are made of this kind of food. It is the source of growth, and repairs the waste caused by work, worry or ill health. A quart of good milk has as much food solids as a pound of beefsteak.

KINDS OF MILK.—There are two kinds of milk. Good milk and bad milk. To produce good milk a dairyman needs brains and honesty. He must know how and he must use his conscience. An ignorant or careless dairyman is an enemy to the race. His stables are filthy, his cows are unhealthy, his milk pale and his udders are not properly cleaned. He feeds slops from the brewer's and his milk is a menace to health. It is so easy to dilute milk that he adds water to it with impunity and as dirty milk will not keep he adds a "preservative" to prevent souring. Think of giving a delicate child such a product. The city milk inspection is a farce. You are at the mercy of your milkman. If you are the value you have had better get one that is merciful.

PRESERVATIVES.—This has come to be such a vital subject that it deserves a special chapter. Preservatives are borax, acid, formaline, formaldehyde, etc., all poisons, and they not only keep milk from souring, but they keep it from digesting. They are antiseptics, that is, they retard chemical change. Milk that has been "preserved" remains in the stomach a heavy inert mass and refuses to be digested. In the summer when it is difficult to get milk from the cow to the customer in good condition, the unscrupulous milkman resorts to these poisons to keep it.

GOOD MILK.—It is easy enough to produce good milk if a man has the knowledge and the desire. First of all and last of all his motto must be cleanliness. You may lay down rules for the conductor of his business with this motto as his watchword, but it will avail nothing if he have not clean instincts. He must abhor dirt and never give up the fight if he wishes to produce pure, sweet, wholesome milk.

METHODS.—The clean dairyman may preserve his milk in two ways, viz., by heating or by chilling. The first is called pasteurizing and is effective, but the heating process changes the character of the milk and renders it difficult of digestion. If fresh new milk is reduced and kept at a temperature of 45 degrees it will keep sweet for several days even in hot weather. That is all there is to it: Cleanliness and cold.

HONESTY.—Cleanliness is next to Godliness. Good milk means cleanliness, cold and honesty. OUR POLICY.—The Bereman Farm Dairy Co. is endeavoring to demonstrate that it pays to be clean and honest. For three years we have sold pure, wholesome milk in sterilized bottles. All the milk we sell is from our own cows. We never buy milk. The continued patronage of our customers proves that it pays to sell a good article at a fair price. We never get complaints about sour or spoiled milk. Many of our patrons have said that our milk was the cheapest they could get but because of the quality. You buy milk for the solids that are in it. You can put water in it yourself if you desire. The city standard requires milk sold in St. Louis to contain 2.8 per cent of butter fat. The milk we sell contains 4.5, with the other solids in proportion.

OUR METHODS.—In this advertisement we will have space for a brief summary of our investigation of the subject and will explain all fully in a special bulletin in the near future.

Raise all the food you can for your cows at home on your own ground. In that way you can get good money for the crops themselves.

FEEDING FOR RICH MILK.

The belief that milk varies in richness according to the food the cows eat still obtains among dairymen whose observations are based upon little practical testing in that direction. Experiment station workers after long and exhaustive tests have decided over and over again that food does not increase richness, but that the fat quantity depends upon the individuality of the cow, though from day to day varying as the result of different causes that work on the cow's nervous system, such as exposure to cold, being tormented by dogs, etc.

Prof. E. H. Farrington in "Farmers' Review" writes again on the matter as follows:

In England the dairy authorities seem not yet to have awakened to the fact that the food fed a cow does not affect the richness of her milk. We can forgive the English for this ignorance, for they have little help from the government in the way of experiment stations. But what shall be said of the ignorance of Ohio legislators, who, having the fullest access to reports of our experiment stations, yet have passed a law virtually declaring that the fat in milk is increased or decreased according to the components of the feeding material. A law is actually in force reducing the necessary and legal fat limit 5 per cent during the months of May and June. They did this under a belief that during those two months the succulence of the feed is such that the fat content is lowered in the milk. It is evident that the Ohio law as made is "not according to knowledge."

Twenty years ago nearly all farmers and educators believed that feeding a rich food made rich milk, and feeding poor food made poor milk. But since that time experiments in Europe and the United States have clearly shown that the well-nigh universal belief was wrong and that milk cannot be made to contain more fat by the feeding of fatty foods. When a large amount of fat is fed, the cow economy takes a certain per cent of it and elaborates it into milk. All the fat in the food, in excess of the certain per cent, is discarded and goes off in the excrement. Therefore if they feed a food too rich in fat let them know that they are enriching the manure and not the milk. The "certain per cent" spoken of varies in different cows, and refers to capacity to elaborate butter fat, which capacity can be measurably increased only by judicious selection and feeding. To what extent blood and milk are identical we do not know, though some investigators have expressed the opinion that milk is merely blood held in suspension. Whatever may be the truth regarding this, it remains true that both tend to show constancy in their composition. This constancy is very necessary; were it not so the blood might be varied within a short time as to cause a complete collapse of the whole system.

HOW TO TRAIN A CALF.

Some of our advanced dairymen differ greatly in their opinions on how to manage a calf immediately after birth. One may say: "I prefer to take the calf away as soon as born rather than be troubled caring for sore teats of the cow. Use for convenience a shallow and broad metal pail, milking for a large calf three quarts, for a small calf about two quarts of milk. Then, after gently caressing the calf, stroking the neck or back with the hand or talking kindly to it, place the milk under its nose and the fingers touching the lips, but not in the mouth; soon it will begin to try to get hold of your fingers; then gently push its nose down into the milk, and in its efforts to get hold of your finger it will get a taste of the milk and is very apt to drink. A little patience and kindness will meet with success. After it has been taught to drink you will find it much better to always place it in a stand when feeding time and let it remain there a short time after it gets through eating, so that it will not form the habit of sucking the other calves' ears." Some others prefer to let the calves remain with their mothers until they are three or four days old. Probably the latter has more followers than the former. It is evident that either proceeding gives good results and may be adopted without detriment to the future welfare of the cows.

WHAT A GOOD COW WILL DO.

We quote the following from a pamphlet on business dairying, issued by P. M. Sharples, West Chester, Pa.: The Cornell University herd of cows (mostly Guernseys and grade Holsteins) in the year 1874 averaged a little more than 8,000 pounds of milk per cow. The descendants of these same cows now average over 7,500 pounds of milk per year. This remarkable improvement has been secured "by the use of pure bred bulls and a rigid selection of the best heifers." The bulletin which gives the history of the herd states that the increase of two and one-half times in the milk product "is the result of judicious selection of sire and dam, together with careful feeding, and is a result which every farmer can obtain by following a similar course." The dairy winter ration at Cornell for the larger cows at the time this bulletin was issued is given as follows: 15 pounds hay, 50 to 55 pounds silage, 10 pounds bran, 10 pounds corn, 8 pounds grain (bran, cottonseed meal, cornmeal). For the smaller cows the ration was 10 pounds hay, 40 to 45 pounds silage, 10 pounds bran, 8 pounds grain. "During the time the cows were at pasture the grain ration was made up of three parts bran and one part cottonseed meal." The average milk production in that year was 7,240 pounds. There were 35 cows in the herd.

The ration quoted is not an expensive one. The average yearly cost of food consumed per cow was \$45.35; average cost of 100 pounds of milk, 63¢; average number of pounds of fat produced per cow, 28½; average cost of one pound of fat, less than 16 cents (15.8 cents); highest cost of a pound of fat, 27 cents; lowest cost of a pound of fat, 11 cents. It is almost unnecessary to state that the cow whose butter fat cost 27 cents a pound was specially sent to the butcher.

The largest single yield of butter fat in the Cornell herd during the past decade was 435 pounds. This was from 10,625 pounds of milk containing an average of 4.1 per cent fat. The largest yield of milk was 13,446 pounds, containing 428 pounds of fat.

The Cornell experiments prove conclusively that a good grade herd can be bred from a herd of ordinary cows by the use of pure bred sires and a careful selection of the best (and only the best) heifers. Heifers thus selected should not be kept if they do not meet expectations. The Babcock test will infallibly tell the tale. The experience at Cornell is quite in keeping with the best dairy opinion of

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the country, which is to the effect that a good cow can and should produce over 5,000 pounds of milk a year; and over 300 pounds of butter a year. The average in the United States is less than 3,000 pounds of milk. Dairymen have in the Babcock test a simple, cheap and infallible way of learning the comparative value of their cows; and there is no excuse for keeping cows in any dairy which produce less than the cost of their maintenance. Every cow stall should yield cash dividends. Scales have a place in every cow stable.

SKILL IN MILKING.

Milking is an operation which requires skill, as it has an important effect on the amount and quality of milk given. Dairymen know that there are as great differences between milkers as between cows and that cows will do much better with some milkers than with others. Indeed, good cows are often almost ruined by poor milkers.

The milker should avoid handling the cow more than is necessary, and he should make it a rule to do his work quickly and thoroughly. He should never go from a sick to a well cow without first cleansing his hands. The habit of wetting the hands with milk is filthy in the extreme and should never be practiced. Some people think it is necessary, but this is a mistake. The hands should be kept dry. If they are not, it is impossible to prevent drops of milk from constantly falling from them into the pail, says the "Farm, Field and Stockman."

The pail should be held close to the udder, so as to expose the milk to the air as little as possible. The farther the streams fall and the more they spray, the more dirt and bacteria they collect. Contamination from the forearm must be avoided, by discarding the first few streams drawn, or less than a gill in all. This entails little loss, as the first milk drawn is always poor in butter fat, and if it happens to be badly contaminated, as is frequently the case, much injury and trouble may be saved.

CLEANING DAIRY UTENSILS.

Prof. G. L. McKay, Iowa.—All tinware used in creamery work should be first washed in warm water to remove the milk, then they should be thoroughly scalded, dried and placed where the air can circulate around and through them. In cleansing separators, particularly the Alpha, it is better to boil the discs in hot water than to steam them as in this manner they will be thoroughly heated through and the metal will evaporate the water or moisture. Frequently discs become rusty and are injured from steaming, as it does not heat the metal enough to cause the water or moisture to evaporate. Never use hot steam on the bearings of any machine. The common mistake in creamery work is not heating water enough to melt the grease. Good, hot water with a little salt soda, a good scrub brush and a strong arm to operate it will bring about the desired results. In washing churns, use lots of clean hot water. After churning for a few minutes with the hot water, which opens up the pores of the wood, the water should be removed and the churn thoroughly rinsed with cold water. After cold water has been run out sprinkle a little salt over the rollers and inside of the churn, then turn the churn upside down with cover removed so that opening will be on the bottom and dust and specks cannot fall into it. The engine should be thoroughly wiped every day.

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Horticulture

THE WINTER MEETING

Of the Missouri State Horticultural Society.

Editor RURAL WORLD: The 4th annual meeting of the Missouri State Horticultural Society will be held at St. Joseph, Mo., December 2-5, 1901.

Program and details will be sent later. L. A. GOODMAN.

Kansas City, Mo.

J. E. MAY'S FRUIT NOTES.

Editor RURAL WORLD: We have learned one or two things this summer at least. We have found out that we can raise apples and peaches without much rain if we cultivate. Our young orchard, six years old, has 200 to 300 bushels of fine apples in it, and they are worth \$1 per bushel. Had we known at the time of setting the orchard what we do now, we would have used Missouri Pippins as fillers, and now had 1,500 or 2,000 bushels of apples this year, as every Missouri Pippin tree is full. We don't like the tree, and the fruit is only medium in size, but good in quality. Were we planting again we would use them for fillers and let them bear two or three crops and then cut them out. We still think the Ben Davis the best apple for this section, all things considered.

Strawberry plants are showing up better than we expected, and we may get a fair crop next season. I have been at fruit filling in the vacant places in our new bed. We will have two acres to pick next season. I have not touched the old bed since picking except to mow them off, and this fall pull out any weeds that had come up. They look now as if they would make a crop, and as they did not bear heavily this season, I think the berries will be good in size. Grapes are almost an entire failure with us.

Adair Co., Mo. J. E. MAY.

WINTER MEETING

Of the Illinois State Horticultural Society.

Editor RURAL WORLD: The officers in charge desire to make the coming meeting of the Illinois State Horticultural Society, to be held at Champaign, Ill., Dec. 10 to 12, 1901, a notable one in attendance, as well as in other respects.

The program will be the best that we can make, the subjects timely, and the speakers well informed on their respective topics. The premiums offered for the exhibit are liberal, and will bring out a fine display of seasonable fruits and vegetables. The University has a large line of machinery, and this with the special exhibits of tools and appliances and spraying machinery, will give a good opportunity to see the latest improvements in these lines. The University also has a fine collection of wax models of fruit which is worthy of inspection and study by orchardists.

This will be a good opportunity to visit children or friends attending the University, and to investigate the grand facilities which it offers for obtaining an agricultural education, as the meeting comes at a leisure time of the year for horticulturists, and special attention will be shown visitors on this occasion.

We desire to make arrangements for special reduced railroad rates, that will be liberal and positive, and to do this it is necessary to know that a sufficient number of persons will avail themselves of the reduced rates if they are obtained.

L. R. BRYANT, Secretary.

Princeton, Ill.

A TRIO OF PEACHES.

Editor RURAL WORLD:

MOUNTAIN ROSE.—During the severe winter of 1898 and '99 the tender branches of peach trees were killed. When the trees saved out in the spring, I noticed one, not far from the kitchen door, that contained much dead wood, and thought that I would experiment with it, imagining it to be only a seedling. I gave it a severe heading in, taking out all dead wood and some of the live; cultivated it well and hunted for its enemies. I was surprised when I learned that I had been trespassing upon a 30-year-old tree. I still have this tree of my adoption loving care. When I cooked corn or onions I poured the boiling water upon the trunk and around the roots to destroy the eggs or young larvae of the peach moth. Occasionally the boiling suds of the weekly wash was used in this way. It thanked me by making a very vigorous growth. In the fall I looked over carefully and wherever gum was found this was removed and a search was made for borers. When found they were destroyed and the wounds were cleaned and filled with soap.

This tree received no harm from freezing the following winter, and during the next growing season it improved and bore two or three peaches. This season was the crowning glory of all, for the tree bore a large crop of fine fruit—large rosy cheeks and white fleshed, juicy and sweet. The skin could be taken off neatly with the fingers without the aid of a knife. The fruit was so perfect and free from worms that it could be safely eaten in the lark, and all who partook of its lusciousness unite in singing the praise of the Mountain Rose.

ELBERTA.—An Elberta, planted at the same time as the Mountain Rose, is not so large a tree, but bore well this season. The fruit was large and fine, with yellow flesh, but we preferred the Mountain Rose as a dessert fruit.

CROSBY.—The Crosby, planted the same time as the others, has not proved hardy. Last season and this it bore peaches, a miserable, ribbed yellow affair, not nearly so good as some seedlings.

Will some of our horticultural writers tell us why the fruit from the Mountain Rose and Elberta trees was free from worms, while there are few specimens from the seedling trees that are not infested with them? Insects dislike many odors, and it may be on account of the small from boiled vegetables, or soap suds, that kept the moths from depositing their eggs, or our more frequent visits to these trees drove them away.

Peoria Co., Ill. MRS. L. HARRISON.

It is claimed that fully 90 per cent of the apple tree seedlings used in the United States for grafting purposes are grown near Topeka, Kas. Shawnee Co., Kas., is said to now have at least 60 or 70 acres devoted to the raising of these seedlings.

Pear trees require food in order to raise large, luscious fruit. Manure them freely.

FRUIT FARMING

In Northeast Missouri.

Editor RURAL WORLD: The soil of the uplands of Pike county, Mo., is peculiarly adapted to the growth of all kinds of fruit. They grow to perfection here and we are glad the people from other states are finding it out, moving here and going largely into commercial fruit growing. Specimens of fine fruit grown here were exhibited at the farmers' institute held at Bowling Green September 22 and 24 and pronounced by fruit growers from a distance to be excellent. Your scribe visits a new fruit place set out lately as reported below.

Solomon says: "A good name is rather to be chosen than great riches." We agree with him. Character, in the race of life, is above the price of rubies. Great men are born with the elements of greatness found within them. The possessor of positive germs of greatness should much them well and put them into exercise early in life and he will be sure to become a prosperous man. Some men inherit a fortune. Others secure financial help from time to time. Some by intelligence and sterling industry achieve greatness, but the "man with the hoe" by a long and tedious way of toil and labor the man for the long run who accomplishes his purpose.

Mr. James Madison Besterfeldt of the Besterfeldt and Downing small fruit farm is a character of the latter type. He and his good wife came here from Jersey county, Ill., some three years ago and bought a broken 40 acres of land just back of Bowling Green on the north, and after paying for it had 2 cents in money left. They went to work, cut off the timber, cleared and cleaned it up and set out the first year 41 apple trees, 230 peach trees, 100 pear trees, 100 plum trees, 75 gooseberries, 75 currants, 200 grape vines, 1,500 blackberries—1,000 bearing and 500 overbearing—one-half acre of strawberries and one-half acre of raspberries. All this work they did the season of 1898—breaking, plowing, cultivating, nursing, watering and trimming—much of it being done after night; one of them holding the lantern while the other set out the trees and plants. During the year 1899 they cultivated the 715 trees already set out the year before. The half acre of strawberries and the half acre of raspberries were planted and carefully worked and dressed, that were set out the year before, and besides they have added to their orchard this year 250 apple trees, 25 Kieffer pear trees, 365 peach trees, making a total of 1,355 fruit trees and 2,000 small fruit plants on this original 40 acres of land.

In the year 1900 they made another purchase of 30 acres of land adjoining the 40 acres of 1898, and are now shouldering a debt of \$300. On this 30 acres they set out 1,250 apple trees, 225 peach trees, 70 pear trees and added one acre and a quarter more to their strawberries, making themselves now an orchard of over 2,900 trees of the very best varieties of standard fruit, with two and one-quarter acres of small fruits. This year they have set out a nursery stock of 15,000 apple grafts, 2,000 peach grafts, set out 3,000 apple plants and 500 apple trees, besides transplanting 2,000 Kieffer pear trees, all on their own ground and for themselves. They have also set out an orchard of 200 trees for Mr. Sam Lowry, an orchard of 325 trees for Campbell Brothers, south of Bowling Green, and for Mr. Ike Stevens an orchard of 100 apple trees, 25 pear trees and a few grapes. For Mr. Della Cowen they set out a cherry orchard of 100 trees and never lost one of them. Mr. Besterfeldt and wife give also attention to poultry, swine and the Belgian hare. In the poultry line they raise the pure white thoroughbred Plymouth Rocks and Buff Plymouths. The pure bred swine, to which they have added a Duroc male hog, and also the pure blood Belgian hare.

We feel that we cannot say too much for the industry and enterprise of this couple of nature. Mr. Besterfeldt is a trained adept in horticulture, a practical agriculturist and a first-class pomologist. He studies the nature of soils and their needs and adapts his culture to them. He studies the nature of the ground and waits for chance to grow them. He measures, mulches, cultivates with the best farming implements, prunes, trims and dresses till his product becomes a thing of beauty and a charm to the eye of the beholder. His team draws a load of wood to market and returns to the farm loaded with honyewine manure. He averages 220 loads of manure a year and at the close of this year he shall have hauled and spread on his soil 1,000 loads of first-class barnyard manure. To this must be added barrels of air slaked lime, hauled from the lime kilns of Louisiana, sufficient in number to make a judicious admixture of the two elements which make a first-class fertilizer. Each individual tree that is planted is washed with soap suds and a composition paint applied to it to keep rabbits and borers from invading the bark and ruining the tree.

Mr. and Mrs. Besterfeldt take great pride in their fruit and labor to have it attractive and first-class in every respect. Last year they sold a high priced bush of strawberries in one day and Mrs. Besterfeldt picked over 100 boxes of berries a day and did the cooking and house-keeping besides. They manage to have ripe strawberries on the table by June 15 and keep them there until October 10.

Pike Co., Mo. MARK W. WOOD.

FORESTRY

(Read Before the Summer Meeting of the Missouri State Horticultural Society.)

Forestry is one of the United States of the new problems. It is one of the most important factors in molding our national life and upon the right treatment of the subject depends in a great measure, the future prosperity of our country. Much has been written upon various phases of the question during the last decade and many laws have been enacted by the national government and various states, many wise but some otherwise. Many investigations are being conducted to determine the proper solution of the problem, all of which are making satisfactory progress.

While forestry is one of the newer problems in this country it has been practiced for ages. Conditions have changed and different treatment must be given; what was just and right a century ago need not necessarily be just and right at the present time. In pioneer days forests were as free as water. It was necessary to destroy them in order to make room for homes, and the destruction has continued in a greater or less degree to the present time. The clearing of the forests in the early days caused little or no injury, but that same practice to-day justly causes more or less concern to all.

Big Sheaves

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familiar with the situation. Why? First, because of the influences forests have upon the physical world; and second, because of the growing scarcity of timber for use in the industries.

With reference to the first, there is no question but that forests modify temperature, influence rainfall and help hold in place river embankments. In this connection allow me to quote from an address by the Hon. D. R. Francis: "The Missouri River 25 years ago bore upon its turbid waves the commerce of several populous and productive states; to-day no craft drawing three feet is justified in attempting to navigate 100 consecutive miles of what was the mighty Missouri. The denudation of the forests which protected the sources and headwaters of that magnificent stream has been a sacrifice—a crime."

"Fertile fields whose productivity was unfulfilled and unsurpassed when nurtured by the sure and steady flow of the great river are now untended and neglected because of the sudden and untimely melting of the snows when unprotected from the rays of summer sun, causes overwhelming floods, which in their precipitous course inflict enormous loss and even endanger human life to be followed by long seasons of destructive drought."

In the second place the destruction is attaining such proportions as to be keenly felt in all timber consuming industries. The supply would soon become exhausted were it not for the various methods of prevention now being inaugurated against further destruction. But I am not to elaborate on this phase of the question, but on that other part—what should be our forestry policy? In the first place the present forest area should be preserved, then properly managed and also added to. To meet these requirements national and state control is essential. Already some 50,000,000 acres situated in the northwestern states have been set aside by the national government as forest reserves. The states of New York and Pennsylvania have secured title to more than a million acres and some other states lesser amounts. The possession of these areas is a step in the right direction, but further steps are as essential. The government reserved its forests at the sources of several important rivers largely for the protection of the latter, and has not yet inaugurated measures for their management on forestry principles. No adequate protection is afforded against vandalism and fires. Instead of these forests being an expense to the government they should be yielding a revenue as soon as the principles of forest management can be put in practical operation. The principles are new—only in the experimental stage with us—and progress must necessarily be slow.

With well trained, scientific and business men in charge, men who are acquainted with all branches of the details, a vast quantity of timber might be removed and young growths protected, altogether practicing a system of rotation which would produce a regular and perpetual supply. Many examples might be cited in support of such a plan, especially in European countries, where various systems have been in vogue for centuries. In our own country Mr. G. W. Vanderbilt's place at Asheville, N. C., furnishes the best example of such a system. He began about 1882 with some 4,000 acres, and has since added about 10,000 more. I am informed that it is being conducted on a profitable basis by practicing a system of rotation and removing only the merchantable timber. He is replanting the young saplings or in many cases replanting from the forest nursery.

The state of New York is introducing a similar plan in her possessions in the Adirondack and Catskill region in connection with its school of forestry. The results will be awaited with national interest.

In addition to the forests already mentioned, there is about twice this area owned by other private parties and corporations, many of which are neither protected nor managed on economic forest principles. A large part is in small scattered tracts, while a portion includes thousands of acres in lumber regions of the north. Fire is the most destructive agency, and for the most part lumbermen have not exercised sufficient care in protecting the woods from such destruction. The census report for 1899 gives the total area destroyed by fire as more than ten million acres, valued at \$35,000,000. With such an annual loss and no provision for renewal a few years more will find our forests bereft of their forests. The owners do not find it to their interest to give the required protection, and, indeed, the work is so extensive and the effect so far-reaching as to go beyond the duties of the individual and the necessary protection should be afforded by the government.

The government forest reserves to which I have already alluded are in charge of the general land office of the Interior Department, while the study of the forestry problems is in charge of the Division of Forestry of the Department of Agriculture in which all of the trained foresters and scientific experts are located. It is gratifying to know that steps are being taken to unite the management, placing the work in charge of trained men. Furthermore, the Division of Forestry is getting in touch with the private owners, especially the smaller ones, and together they are putting in practice the best known economic principles and planning particular treatment for each individual tract.

The national government and many of the states have attempted to encourage planting of forest areas in the prairie regions by decreasing the burden of taxation and giving title to certain acreage

on condition that a certain number of trees in a specified manner. Thousands of acres have been planted as a result of this impetus. But where lands will yield larger returns by other means the owners should not and cannot be expected to grow forests. Moreover if a man owns forests and finds it more profitable to remove the timber and grow other crops he should have the liberty to do so. In fact, it would not be economy to do otherwise, either for the government or the private citizen. There are sufficient areas on which forestry may be made to yield the greater profits and most of these tracts may be purchased at very low rates. This, it seems to me, is the sum and substance of the whole matter. Let those forests be weeded out where more profitable crops can be grown, but let it be done gradually and judiciously. Protect those which are best situated and which can best be managed and let others be established in the arid regions of the west and abandoned farms of the east if there are such that can be utilized for the purpose. Returns from new forests must necessarily be so slow that the average man does not care to wait so long, even though there be profitable returns. Let the government secure a still greater acreage and manage, together with what they already possess, on a rational business basis and co-operate with the individual, the sum of which will redound to the honor, glory and prosperity of our country, her people and for all time to come.

H. C. IRISH,
Mo. Botanical Garden, St. Louis, Mo.

\$50,000 WORTH OF APPLES ON HIS TREES.

According to the Kansas City "Journal" Mr. B. F. Coombs of Kansas City has refused an offer of \$50,000 for the apples he has hanging on his apple trees in Kansas. The proposition was made by C. O. McDonald, representing Patrick Gleason of Le Roy, N. Y., who is known as the "Apple King." Mr. McDonald indicated that he expected the deal to be made, but Mr. Coombs stated still later that he had decided not to accept the offer.

"I have concluded after careful investigation," he said, "that my crop will be worth several thousand dollars more than the amount is proposed to give."

Mr. McDonald expressed the opinion after having visited twelve apple growing states, that Mr. Coombs' crop this year will be more valuable than that of any other man. He has 600 acres of apples at Parker, Kan.; 500 acres at Lane, Kan.; and 400 acres at Willow Springs, Kan. It is estimated that his entire yield will exceed 30,000 barrels. He will harvest 40 car loads of Jonathans alone. No other man in the world will have so many. His trees vary in age from 7 to 14 years and include the Jonathan, Ben Davis, Win-Sap, Missouri Pippin and a few other varieties. Mr. McDonald's estimate of the amount the crop would be worth to the house he represents was based upon observations he had personally made in all the Coombs orchards. He has been Mr. Gleason's chief buyer for seven years, and he can come as near to a perfect estimate as any man in the business.

"For seven years I have spent the greater part of each summer visiting orchards, and making estimates regarding the value of their crops for Patrick Gleason," he said. "During the last few weeks I have been in Kansas, Missouri, Nebraska, Colorado, Oregon, California, West Virginia, Pennsylvania, Maryland and New York, and have bought at least one crop in each state and in some several. People sometimes ask me how I can come so near telling how many barrels will be gathered from a certain orchard. Well, I don't always come near it, but I go out and look over an orchard, just as another man looks over a horse, and then I guess what it's worth. Sometimes I miss the mark widely; but, like a good judge of horses, I usually come pretty near it. New York, of course, has the best crop of the season," said Mr. McDonald. "New York always leads on apples. But I have found as good ones in Kansas and Missouri as in any other place. I have found that no man has finer apples this year than Ben Coombs. Dry weather has affected the crop some. The 'big Missouri red apple,' raised in the southern part of that state, will not be much in evidence. The crop in that part of the state is almost a failure. Taking the country at large, there will be less than two-thirds of a crop and prices will be high. The high price of apples is the difference from former years in the prices at fruit stands and grocery stores; but a barrel will cost about \$15.00."

Mr. Gleason, whom Mr. McDonald represents, handled 233,000 barrels—\$1,000,000 worth—of the kind of fruits last year. He has cold storage facilities this year for 200,000 barrels, and expects to handle that many.

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After 2000 experiments I have learned how to cure Rheumatism. Not to turn bony joints into flesh again; that is impossible. But I can cure the disease all ways, at any stage, and forever. I ask for no money. Simply write me a postal card and I will send you an order on your nearest druggist for six bottles of Dr. Shoop's Rheumatic Cure, for every druggist keeps it. Use it for a month, and if it does what I claim pay your druggist \$5.00 for it. If it doesn't I will pay him myself.

I have no samples. Any medicine that can affect Rheumatism with but a few doses must be drugged to the verge of danger. I use no such drugs. It is folly to take them. You must get the disease out of the blood.

My remedy does that, even in the most difficult, obstinate cases. No matter how impossible this seems to you, I know it and I take the risk. I have cured tens of thousands of cases in this way and my records show that 35 out of 40 who get those six bottles pay, and pay gladly. I have learned that people in general are honest with a physician who cures them. That is all I ask. If I fail I don't expect a penny from you.

Simply write me a postal card or letter. Let me send you an order for the medicine. Take it for a month, for it won't harm you anyway. If it cures, pay \$5.00. I leave that entirely to you. I will mail you a book that tells how I cured Dr. Shoop, Box 535, Racine, Wis.

When the soil is too compact about the roots of plants, they languish for want of air.

The Apiary

HARVESTING, PACKING AND MARKETING HIGH-GRADE HONEY.

Vending his honey with success requires the producer to pay as close attention to the outward appearance as to the quality of his products. The conclusion that the person who does his work in a business like way in one direction will also do the same in another holds good generally, and we will generally be disappointed if we expect to find a first-class article under a slipshod covering, writes C. G. Greiner in the "Ohio Farmer."

An attractive, clean and tasty appearance is especially desirable and helps raise the market value of most all the products of the soil, which we usually term eatables. They may be the direct productions, such as grain, vegetables, fruits, etc., or the more indirect, like milk, butter, chickens, etc.—all are improved by a little extra care in preparing them for market. One of the latter class is the product of the beehive—honey.

On account of its great fragility and its subsequent liability to soil itself and all its surroundings, it requires, perhaps, more than most any other article, careful and judicious management to prepare and retain it in presentable shape.

The beekeeper, who intends to keep up with the times and successfully compete with others of the fraternity, has to begin his operations early in the season, even before the bees begin to store surplus honey. Colonies must be in proper condition to take advantage of the different honey flows as the quicker section cases are filled and finished, the finer the appearance of the honey. All appliances and everything connected with the production of surplus honey (comb honey in particular), must be of the right kind and construction, must be managed right, and at the proper time. Honey should not be left in the hive after it is finished; it will not improve, but may greatly impair its fresh and inviting appearance.

After the honey is taken from the hive and is being prepared for the market it is of the utmost importance to have it stored in every respect to the same standard as when it was in the hive. To have the same grade of honey by itself, but the sections should also be sorted in regard to what we might call their mechanical construction. Sections that are filled and capped clear to their bordering cells, should not be packed in the same crates with those that have more or less open cells on the outside. The contents of a crate should be so uniform in every respect that any section may be drawn from the face tier, the middle, or the back part of the crate, will be a fair sample of the whole contents of the crate from which it is taken. Although the quality of the honey may be exactly the same, if the sections are not uniform in construction, causing a variation in weight and appearance, it will have a tendency to produce dissatisfaction on the part of the consumer. The section dealer as well as the retail dealer and consumer.

It would not be prudent to market honey in unsightly, inferior looking crates; it will reduce the price of the article from one to two or three cents per pound. This the beekeeper cannot afford to do. He has spent his time and labor during the season to produce his crop of honey. Crates should be made as neat and tasty, as mechanical skill and reasonable expenses can make them. If the beekeeper has not the proper facilities to manufacture them at his command, it would be advisable to purchase the material from some reliable beekeeper's supply establishment. They are prepared to do this work so perfectly that any person who has even a limited amount of mechanical ingenuity can put them together and do a fairly good job at it. One point, however, I wish to emphasize, and that is to make provisions against all leakage. A leaky crate becomes a nuisance on the counter of any store, and a daubed section is anything but pleasant to handle. On this account the groceryman dislikes to deal in these goods, and it is to the honey producer's own interest to do all in his power to overcome this trouble.

To make the crate honey tight, a paper lining, or box is used. It is made of a sheet of heavy manila paper, one inch larger all around, than the inside of the crate. Weigh the high tin in the right angles, the corners turned and the sheet placed in the bottom of the crate, it forms a tight receptacle, making the crate practically leakproof. Then, to prevent the sections from getting daubed to any extent, so-called dripsticks are placed in the bottom of the crate. They are one-fourth by three-fourths inch sticks, running crosswise of the crate and secured with glass or small wire nails placed at such distance that each one of the center ones may serve for two tiers of sections to rest on.

It is customary and the market demands, that honey crates be glazed, at least on one side. It not only improves the appearance, but it also enables the dealer to examine the goods without being obliged to open the package.

WINTERING BEES.

Bees ought to be prepared for winter before very cold weather sets in. When the fall honey crop is removed from the hive, it is none too early to begin work. In the middle states the beginner will have better results by wintering on the summer stands. Cellar wintering requires more experience and watchfulness, says a writer in the "Farm Journal." The first requisite necessary for successful wintering is to have been enough to cover at least four Langstroth frames. They should have from 30 to 35 pounds of good, ripe honey. If lacking in stores, they should be fed good granulated sugar. One cup and a half of sugar to one cup of hot water makes a sirup of the right consistency. If you have on hand some extracted honey, and a few tablespoonsful, which will prevent its granulating. Bees will winter well fastened with glass or small wire nails placed at such distance that each one of the center ones may serve for two tiers of sections to rest on.

If the bees are in a double walled chaff hive, no more protection is necessary. If in a hive of single thickness, an outer case of some sort should be put over the hive, but in no wise close up the entrance for the bees need plenty of fresh air. The entrance should be left open full width, which will also prevent the combs from becoming moldy.

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the bees will go out for a cleansing flight, after which they will be able to stand another month of rigorous weather.

With cellar winter I have had no experience, but the conditions necessary there-to are to have a good ventilated cellar, kept dark, with an even temperature of above 45 degrees. Some time in November, right after the bees have had a good flight, remove them to the cellar, selecting the time toward evening. The bees should be handled as gently as possible to keep them from filling themselves with honey, for it will be from four to five months before they will again have a cleansing flight.

The essentials for successful cellar wintering are an even temperature, quietness, darkness and ventilation.

THE JAWS OF THE HONEY BEE.

With the closest scrutiny it becomes evident that the bee does not, like other creatures, house its tongue in its mouth, but neatly folds it back beneath its head. Bumble bees, when disturbed, have a way of threatening with their jaws, while the honey bees have the more direct method of setting intruders with her sting.

The jaws of the bee are very creditable organs and can give quite a formidable Catch a bee in a net and see how viciously it will bite at the meshes, working its jaws sidewise instead of up and down.

We call this wonderful implement of the bee a tongue, but in reality it is more than this, for the whole arrangement consists of two slender filaments called maxillae, the under lip and the actual tongue. If a drop of honey lies near the surface of a flower the slender, active tongue, darting out from the case formed by the maxillae, licks it up with the same ease that a dog licks a plate. In addition to this telescoping power, the tongue is a hairy member, the hairs arranged in rings, the longest ones toward the center. They assist in lifting in the nectar and in pumping it into the mouth. Thence it goes to the honey sac.—The Chautauquan.

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Live Stock

DATE CLAIMS FOR LIVE STOCK SALES.

Oct. 16-17, 1901—Estate of G. W. Kennedy.
Oct. 25—National Galloway sale at Kansas City, under the auspices of the American Galloway Breeders' Association.
Nov. 1—Douglas, Ill., Shorthorns.
Nov. 5-6—O. Cowan, New Point, Mo., and W. T. & H. B. Clay, Pittsburg, Mo., at Kansas City, Shorthorns.
Nov. 5, 1901—Combination sale Shorthorn Cattle, Sturgeon, Mo. J. J. Little, Jr., F. Keith and E. S. Stewart, Sturgeon, Mo., and J. H. Cottingham, of Clark, Mo.
Nov. 12-13—Purdy Bros., Harris, Mo., and D. L. Dowdy & Co., Arrington, Kas., at Kansas City, Mo., Shorthorns.
Nov. 14-15—Sale of Berkshire and Jersey cattle, Biltmore Farm Annual, Biltmore, N. C.
Nov. 15, 1901—L. A. Novinger & Sons, Shorthorns, Kirksville, Mo.
Dec. 10, 11, 12 and 13—Kirk B. Armour and Jas. A. Funkhouser, at Kansas City, Hereford cattle.
Dec. 18—C. D. Bellows, Maryville, Mo., at South Omaha, Shorthorns.
Dec. 18-19, 1901—Gudgell & Simpson, C. A. Stannard and Scott & March, Herefords, at Fort Worth, Tex.
January 23 to 31, 1902—Sothams' annual Criterion Sale, at Kansas City.
Jan. 15 and 16—American Angus Cattle, Mo., Hereford cattle.
Feb. 11-13, 1902—Redhead Anisley, Boyles and others, at South Omaha, Neb. Hereford cattle.
March 6-11—M. Forbes & Son, Henry, Ill.; J. F. Prather, Williamsburg, Ill.; S. E. Prather & Son, Springfield, Ill.; C. B. Dustin & Son, Sumner, Mo.; T. J. Wormald, Moline, Mo., and others, at Chicago, Ill., Shorthorns.
March 11—W. F. Nichols, West Liberty, Iowa, Shorthorns.
June 19—C. E. McLane, Danville, Ind., at Indianapolis, Double Standard Polled Durham.
The "National Hereford Exchange" under management of T. F. B. Sotham, as follows:
Nov. 23-25, 1901—East St. Louis.
March 25-27, 1902—Chicago.
April 25-27, 1902—Kansas City.
May 27-29, 1902—Omaha.
June 24-26, 1902—Chicago.
POLAND CHINAS.
Sale at Ill. State Fair Grounds, Springfield, Ill.
Oct. 12—R. T. Williams, Russellville, Mo.
Oct. 17, 18, 19—American Angus Cattle Show and Sale, W. T. McIntire, Sec. and Manager, Stock Yards, Kansas City, Mo.
Oct. 21—E. L. Leslie, Memphis, Mo.
Oct. 21—E. E. Axline, Oak Grove, Mo.
Oct. 23—J. T. Robinson, Bates City, Mo.
Oct. 24—F. H. Schoeller, Rockport, Mo.
Oct. 25—W. N. Winn & Son, Kansas City, Mo.
Oct. 26—T. H. Martin, Kansas City, Mo.
Oct. 27—C. E. Pogue, Findlay, Ill.
Nov. 4—J. W. Williams, Cicero, Ill.
Nov. 5—E. O. Minnie, Edinburg, Ill.
Nov. 6—C. C. Brown, Heyworth, Ill.
Nov. 7—D. J. Walters, Krumer, Ill.
Nov. 12—W. E. R. Woodbury, Danville, Ill.
Nov. 13—E. H. Wane, Douglas, Ill.
Nov. 14—E. L. Johnson, Onida, Ill.
Nov. 15—W. McKibbin, Garden Prairie, Ill.
Nov. 19—Victor Wiley, Fuller, Ill.
Nov. 20—H. G. Davis, Woodland, Ill.
Nov. 23—J. B. Fink, Herborn, Ill.
Oct. 25—Kansas City, Mo., Galloway sale.
ABERDEEN-ANGUS CATTLE.
Oct. 17-18—National sale, W. C. McGavock, mgr., Kansas City.
Dec. 3-6—International sale, W. C. McGavock, mgr., Chicago.
Feb. 4-6—Combination sale, W. C. McGavock, mgr., Chicago.
April 10-11—Combination sale, W. C. McGavock, mgr., Kansas City.
June 10-11—Combination sale, W. C. McGavock, mgr., Chicago.
NATIONAL SHORTHORN SHOWS AND SALES.
Oct. 16-18—Kansas City, Mo.
Nov. 15—Kansas City, Mo.; Messrs. B. B. and H. T. Grooms of Staked Plains Farm of Panhandle, Tex.
Nov. 17—At Sturgeon, Mo.; by Messrs. J. J. Little, Dr. J. F. Keith, E. S. Stewart, all of Sturgeon, and J. H. Cottingham of Clark, Mo.
Dec. 3-6—Chicago, Ill.
Dec. 5-6—Chicago, Ill.
NATIONAL HEREFORD SHOWS.
Oct. 16-18—Kansas City, Mo.
Dec. 2-7—Chicago, Ill.
NATIONAL HEREFORD SALES.
Oct. 22-24—Kansas City, Mo.
Dec. 3-4—Chicago.

PEDIGREES DO COUNT.

If pedigree does not count for anything in live stock breeding why have show breeders published 40 or 50 volumes of pedigrees, and other breeders in proportion? Why does pure bred stock that has a full pedigree sell for so much more than grade animals that can show no pedigree? Because the pedigrees furnish a history of the ancestors of the animal in question, says the "Texas Stockman." If the majority of them have made good records and have been good breeders the chances are that the present animal will make a good breeder. With the grade animal that can furnish no history we must judge his breeding qualities from his looks and this is by no means a sure method. A careful breeder of pure bred live stock will attach as much importance to a pedigree as to the animal itself. By this we do not mean that every animal that can show a pedigree will sell for a fabulous price but that it will be no better than other animals that have no pedigree. But the animal that is only a fairly good animal and has a pedigree that shows much of the best blood of the breed will be preferred to the one that in itself is of great excellence but has nothing in his pedigree that is more than ordinary.

Aug. 25, 1901.

E. J. CARVER, Colo. Iowa. Dear Sir: Enclosed please find \$1 for which send me one bottle of lumpy jaw cure. I have used one bottle already and find it as recommended. Yours, H. E. KEITH, Moran, Kansas.

(This man must have been satisfied or he would not order again. If interested, write Mr. Carver direct.—Ed.)

F. M. LAIL, Marshall, Mo., sold his first prize and sweetest baby, Corcor, at Illinois State Fair, to Messrs. Winn & Martin, Kansas City, Mo., for \$250.

H. O. MINNIS, who has been Superintendent of Swine at Illinois State Fair for two years, was unanimously recommended by all the exhibitors for the superintendency next year.

PATENT GROOVED Tire Wheels

For Farm Wagons

Any size to fit any wheel.

Made only by the

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Write for Price.

THE KANSAS CITY CATTLE SHOW.

The Hereford portion of the American Royal Cattle Show and sale promises to be a record breaker in several respects. At the time of this writing, with a week yet in which entries may be received and a number of the larger exhibitions yet to be heard from, the Hereford office has received entries from 42 of their breeders, each breeder consigning from one to 20 animals each to the show. This is without doubt the largest number of exhibitors of one breed of cattle ever entered for prizes at one show. Practically all of last year's exhibitors, with the exception of those whose show herds have been dispersed, will be back again, and in addition a score or more breeders who have never before shown their cattle or have exhibited only at state and local fairs, will be on hand with some of their best cattle.

For example, there will be at least 14 aged bulls in the ring contesting for prizes in this section. Not less than 20 yearling bulls will be shown in section three, and the other rings are proportionately large. There were people who were of the opinion that last year's large rings could not again be duplicated, but it seems that another opportunity was all that was needed to equal, and very probably surpass, last year's magnificent showing.

The 150 Herefords to be sold at public auction on the afternoons of Tuesday, Wednesday and Thursday, October 22, 23 and 24, are confidently expected to be an offering much superior to that of last year. Of the 105 females cataloged 41 are yearling heifers—most of them nearly two years old; 36 head are two-year-olds, and 28 head are three years old or over. Of the latter class the 28 are with a few exceptions cows three and four years old and are either to be sold with calves at foot or are bred and due to calve shortly.

The 45 bulls are mostly long yearlings, but seven of them being two-year-olds, and two only are to exceed three years old. Not only is the entire consignment of desirable ages, but the catalog is full of pedigrees of animals of individual merit. Many of them are also entered for competition in the show, and a number have been premium winners at other shows and fairs held previous to this event. It has not been possible to make a personal inspection of the cattle to be sold, but the consignors have been warned to bring nothing but strictly first-class cattle, and should under any circumstances an animal in any way undesirable be brought to the sale barn, it will be denied the privilege of selling. For catalog write C. R. Thomas, Gen'l Supt., Kansas City, Mo.

MAINTENANCE RATION FOR CATTLE.

On account of the probable scarcity of feed during the fall and winter of 1901-02, the Kansas Experiment Station undertook an experiment in feeding wheat straw and adding enough ground wheat to secure a maintenance ration. Three dry cows averaging 1,226 pounds live weight, two two-year-old heifers averaging 1,069 pounds, and three calves averaging 510 pounds, were selected for this test. The experiment began August 1, when the aggregate weight of the eight head amounted to 7,327 pounds. As the cows came from good sorghum pasture and the heifers and calves from good prairie pasture they did not relish the wheat straw for the first few days, and only consumed about ten pounds daily per head. The cattle were fed four pounds of ground wheat daily per head throughout the experiment. By dampening the straw and sprinkling the grain on and through it, considerably more straw was consumed, the average for 31 days being 10½ pounds daily per head. At the close of the first week every animal in the experiment lost in weight, the average being 62 pounds per head. During the second week they regained a considerable portion of this loss. At the close of the experiment, September 1, the three cows weighed an average of 1,172 pounds, a loss of 54 pounds per head for the 31 days under experiment, the heifers averaged 1,067 pounds, a gain of eight pounds per head, and the calves averaged 523 pounds, a gain of 13 pounds per head. The total weight of the lot at the close of the experiment was 7,217 pounds, a loss of 110 pounds for the lot, or 13 pounds per head, a small item when one considers that it all came in the first week of the experiment. The total feed consumed by the lot was 4,232 pounds of wheat straw and 392 pounds of ground wheat. The straw was hauled about eight miles and did not contain any chaff or refuse wheat. When the cattle have access to a straw stack they get considerable chaff and more or less shriveled or waste wheat blown over with the chaff. Under these conditions cattle would not need as much wheat as given above.

This experiment indicates the possibilities in wintering cattle. When wheat straw, doubtless the poorest ration available, can maintain an animal with a small outlay for ground wheat, it ought to encourage a farmer to hold his cattle. Straw is abundant, especially in the western part of the state. In many places it is being burned in order to get rid of it. Where straw can be had for the hauling and wheat at 60 cents per bushel the feed cost of keeping a 1,000-pound cow on a maintenance ration need not exceed \$1.25 per month. Since the straw costs \$5 per ton, the feed cost would be only \$2.50 per head per month, or \$1.50 more than it usually costs in years when feed is plentiful. Most every farm produces rough feed considerably better than wheat straw. Prairie hay, corn fodder, Kaffir corn fodder, sorghum fodder or hay can be fed either alone or in combination with wheat straw, and the amount of grain required for maintenance reduced. Where red clover or alfalfa is available little or no grain need be fed.

The present low prices of stock cattle, with every prospect of high prices in the spring, and the cheapness with which cattle can be wintered, as shown by the above experiment, should induce farmers to hold their cattle, even though they could be sold at fair prices.

D. H. OTIS, Kansas Experiment Station, Manhattan, Kas., Sept. 17.

THE CATTLE INDUSTRY.

Dr. Salmon, Chief of the Bureau of Animal Husbandry, U. S. Department of Agriculture, stated in a recent address to a meeting of cattle men at the Pan-American Exposition, that the United States has the largest aggregate number of cattle representing the largest investment of any country in the world. He then mentioned the work of the Bureau of Animal Husbandry in connection with the consular department in their efforts

to increase this trade by sending cattle to Mexico, Central and South American countries, and gave the difficulties that had been met with in their endeavors in this direction; prejudices, quarantine regulations, lack of proper transportation and other causes had presented innumerable stumbling blocks. In addition to these troubles, the scarcity of cattle in our own markets has added to the difficulty of extending trade in these directions. A point worthy of careful consideration is the fact that our own cattle are decreasing proportionately as the population increases. No statement in connection with the cattle business could possibly contain more material for study than this.

VACCINATION FOR BLACKLEG.

Blackleg is one of the most dreaded diseases afflicting cattle. Vaccination of the animal has proven to be the most effective preventive treatment yet discovered, and its use and what is known of its value were discussed by Dr. John R. Mohler, of the U. S. Bureau of Animal Industry, in a paper prepared at the request of Secretary F. D. Coburn of the Kansas Board of Agriculture, and presented at the board's recent annual meeting. Dr. Mohler said, in part:

"Blackleg is an infectious disease, caused by a specific germ, which is almost universally present in the ground in all districts where the disease is known to prevail. This microbe, upon gaining entrance into the system, usually through punctured wounds made by briars or stubbles, develops rapidly and causes hemorrhagic, bluish-black, gas-filled swellings. The course of the disease is very rapid, and the animal usually dies within twenty-four hours after the appearance of the first symptom."

"By vaccination we understand the injection into the system of a minute amount of attenuated or artificially weakened blackleg virus, for the purpose of producing a mild and clinically unrecognizable case of blackleg. The virus is obtained from animals which have died from blackleg by securing the affected muscles, cutting them into strips and drying them in the air. When perfectly dry they are pulverized, mixed with water to form a paste, smeared in a thin layer on flat dishes, placed in an oven, and heated for six hours at a temperature which approaches that of boiling water. The paste is thereby transformed into a hard crust, which is pulverized and sifted and measured out into packets containing either ten or twenty-five doses. This powder constitutes the vaccine, the strength of which is thoroughly tested on experiment animals before it is distributed among the cattle owners."

"The process of manufacture as it is here described appears extremely simple, but it requires, nevertheless, constant vigilance and great experience to produce a vaccine which on the one hand will be sufficiently strong to enable the animals to resist a subsequent attack of the disease, and which on the other hand has been made sufficiently harmless to insure that the most susceptible animal does not develop an acute case of blackleg as a result of the injection."

"If all animals were equally resistant to the disease or equally susceptible to a happy medium could easily be decided on, but the great difficulty in the preparation of vaccine lies in the fact that no two individuals possess the same power of resistance. In fact, some animals, fortunately a very small number, are so susceptible to the disease that the injection of the vaccine results in the development of fatal cases of blackleg; but statistics from this country, as well as from Europe, show that these cases amount to less than one in 2,000 among the several million animals which have been vaccinated during the past 14 years; that is, since vaccination for blackleg was first introduced."

"As to the protective value of vaccine, we are in receipt of more than 500 complete reports from Kansas stockmen, covering their experience with blackleg in general, and with vaccination in particular. A tabulation of these reports shows that the estimated loss from blackleg in unvaccinated herds amounts to ten and one-half per cent, while the actual loss of animals due to the postponing of vaccination until the disease had appeared in these herds amounted to 2,390 head, or three and one-half per cent of the total number of cattle. This means a loss last year of at least \$55,000, which could easily have been avoided if the cattle owners in the infected districts would have vaccinated their young stock previous to the beginning of the blackleg season."

"These figures speak for themselves, and it is to be hoped the time will come when every cattle owner will come to the conclusion that vaccination is a duty he owes to himself as well as to his neighbors, and that the inconvenience in obtaining vaccine and applying it to his cattle is outweighed a thousandfold by the benefits derived from its use."

IMPROVEMENTS IN BLACKLEG VACCINATION.

The wide and successful use of Pasteur Blackleg vaccine in the United States and Canada has nearly completed its seventh year, which shows the real value of this remedy to the cattle raisers in those parts of the country where blackleg is troublesome. The old powder from vaccine, requiring a hypodermic syringe and set of instruments to mix, filter and inject it, is being rapidly displaced by "blacklegine," which is Pasteur Blackleg Vaccine in the form of a cord, ready for use as sold, and is applied with a needle. When the cord form was devised and put to practical use in 1897, vaccination at once became more popular as it was readily seen that the improved method was more simple but just as effective as the old. Cattlemen who contemplate vaccinating their calves this fall will be glad to learn that an improved needle for applying "blacklegine" is now being furnished which renders vaccination more rapid and easier than ever. The improved needle is provided with a detachable handle and extra needle in case of accident. The handle with the two needles is called the "Blacklegine Outfit," and costs only fifty cents. Cattlemen who raise calves and who have been using Pasteur "Double Vaccine" (powder form) will be pleased to know that the double treatment is now furnished also in the cord form, known as "Double Blacklegine."

Write to Pasteur Vaccine Company for pamphlet about the cause and nature of blackleg and its successful prevention with Pasteur Blackleg Vaccine, and also ask for illustrated price list of other valuable preparations of interest to stock owners. Its head office is in Chicago, with branches or general offices in New York, Omaha, Kansas City, Denver, Fort Worth and San Francisco.

CATTLE AT THE ILLINOIS FAIR.

In its report of the Illinois State Fair, held last week, the Springfield "Journal" says:

"Thousands of interested people watched around the great Shorthorn contest in the Coliseum at the state fair grounds all day yesterday. It was undoubtedly the best exhibition of that breed of cattle ever seen in the west. As expected, W. D. Platt, the noted Canadian breeder of Hamilton, Ont., carried off the lion's share of the awards. His famous bull, 'Valiant,' champion at Toronto and Syracuse, N. Y., was declared the senior champion at the Illinois fair. The junior champion is 'Nonpareil of Clover Blossom,' owned by George Bothwell of Nettleton, Mo. The matchless two-year-old cow of J. A. Robbins of Horace, Ind., again defeated all competitors. 'Clarissa,' also owned by Mr. Robbins, taking the junior championship."

"Cicely," the champion aged Flatt cow, held her own against every competitor, winning first prize. 'Nonpareil of Clover Blossom,' a yearling owned by George Bothwell of Nettleton, Mo., was a sensational feature, winning a blue ribbon."

Mr. Platt captured four blue ribbons. Other breeders having animals in the first class were N. H. Gentry of Sedalia, Mo., and G. Harding & Sons, Waukegan, Wis. This practically ended the live stock competition in the breeding classes. But one herd of Herefords, that of O. Harris of Harris, Mo., is here, and that will be displayed in the ring to-day."

Awards in the beef classes were as follows:

SHORTHORN CATTLE.

Bull 3 years old or over—First to Valiant 171067, owned by W. D. Platt, Hamilton, Ont.; second to Golden Victor 128072, owned by George Harding & Son, Waukegan, Wis.; third to Thea and for 3rd and 4th, owned by J. G. Robbins & Son, Horace, Ind.

Bull 2 and under 3—First to Lord Bamf 150718, owned by W. D. Platt; second to Red Lad 149832, owned by C. F. Rice, Indiana, Ill.; third to Black Watch 153334, owned by George Bothwell, Nettleton, Mo.

Bull 1 and under 2—First to Nonpareil of Clover Blossom 153674, owned by George Bothwell; second to Nonpareil Herd 170753, owned by George Bothwell; third to Marmaduke 24 170310, owned by C. F. Rice.

Bull under 1 year old—First to animal owned by N. H. Gentry, Sedalia, Mo.; second to Roy Archer, owned by George Harding & Son; third to animal owned by N. H. Gentry.

Cow 3 years old or over—First to Cicely, owned by W. D. Platt; second to Empress 12, owned by W. D. Platt; third to Young Matchless, owned by J. G. Robbins & Son.

Cow 2 years old and under 3—First to Ruberta, owned by J. G. Robbins & Son; second to Rose of Autumn, owned by George Harding & Son; third to Ascot Mayflower, owned by W. D. Platt.

Heifer 1 and under 2—First to Clarissa, owned by J. G. Robbins & Son; second to Golden Fawn, owned by George Harding & Son; third to Snowball, owned by Grey Tower Stock Farm, Grass Lake, Mich.

Heifer under 1 year old—First to Lad's Gilder, owned by J. G. Robbins & Son; second to Queen to Beauty, owned by George Bothwell; third to Golden Lassie's 3d, owned by J. G. Robbins & Son.

Exhibitor's herd—First to W. D. Platt; second to J. G. Robbins & Son; third to George Harding & Son.

Breeder's young herd—First to J. G. Robbins & Son; second to George Bothwell; third to N. H. Gentry.

Get of one sire—First to George Bothwell; second to J. G. Robbins & Son; third to C. F. Rice.

Produce of one cow—First to George Harding & Son; second to Grey Tower Stock Farm; third to George Bothwell.

Cow 2 years old or over—Premium to Ruberta, owned by J. G. Robbins & Son.

Heifer under 2 year old—Premium to Clarissa, owned by J. G. Robbins & Son.

HEREFORD CATTLE.
Bull 2 and under 3—First to Lomax 8998, owned by O. Harris, Harris, Mo.
Bull under 1 year old—First to Good Enough 3d 11984, owned by O. Harris; second to Burke 119833, owned by O. Harris.

Cow 3 years old or over—First to Betty 2d 7605, owned by O. Harris.
Heifer 2 and under 3—First to Lady Dewdrop 2d 7546, owned by O. Harris.
Heifer 1 and under 2—First to Kassil 3d 34714, owned by O. Harris; second to Silver Cup 104718, owned by O. Harris.

Heifer under 1 year old—First to Troublesome 119946, owned by O. Harris; second to Lucile 2d 110638, owned by O. Harris.

Exhibitor's herd—Premium to O. Harris.
Breeder's young herd—Premium to O. Harris.
Produce of one sire—Premium to O. Harris.
Produce of one cow—Premium to O. Harris.

Champion—Bull 2 years old or over—Premium to Lomax.
Bull under 2 years old—Premium to Good Enough 3d.
Cow 2 years old or over—Premium to Betty 2d.

Heifer under 2 years old—Premium to Kassil 3d.

ABERDEEN-ANGUS CATTLE.
Bull 3 years old or over—First to Heather Lad of Emerson 2d 19049, owned by A. C. Binnie, Alta, Ia.; second to Royal Lad 39663, owned by W. A. McHenry, Denison, Ia.; third to Valiant Knight 2d 23831, owned by D. Bradute & Son, Cedarville, O.

Bull 2 and under 3—First to Rosegay 3078, owned by C. H. Gardner, Blindsville, Ill.; second to Eclipse 2d, owned by E. Reynolds & Son, Prophetstown, Ill.

Bull 1 and under 2—First to Bambo 28965, owned by W. A. McHenry; second to Macdonald 3d 35552, owned by A. C. Binnie; third to Gay Burns 34489, owned by Gardner (C. H.).

Bull under 1 year old—First to Bobbie Dobs, owned by W. A. McHenry; second to Fearless Lad 45831, owned by A. C. Binnie; third to Lucy's Prince 46131, owned by D. Bradute & Son.

Cow 3 years old or over—First to Pride McHenry 5th 22304, owned by W. A. McHenry; second to Fannie of M. B. 26709, owned by D. Bradute & Son; third to Key of Chicago 24459, owned by C. H. Gardner.

Heifer 2 and under 3—First to Barbara McHenry 13th 32488, owned by W. A. McHenry; second to Mina of Alta 3d 32550, owned by A. C. Binnie; third to Mabel of M. B. 33433, owned by D. Bradute & Son.

Heifer 1 and under 2—First to Barbara of Denison 14th 38960, owned by W. A. McHenry; second to Blackbird of Denison 31st 38949, owned by W. A. McHenry.

Cow 2 years old or over—Premium to Rosegay 3078, owned by C. H. Gardner.
Bull under 2 years old—Premium to Bobbie Dobs, owned by W. A. McHenry.
Cow 2 years old or over—Premium to Barbara McHenry 13th 32488, owned by W. A. McHenry.

Cow under 12 years old—Premium to Blackbird of Denison 31st 38949, owned by W. A. McHenry.

GALLOWAY CATTLE.
Bull 3 years old or over—First to Druid of Castlemilk 17064, owned by O. H. Swigart, Champaign, Ill.; second to Muscom 2d 15814, owned by E. H. White, Etterville, Ia.; third to Scottish Standard 15221, owned by Brookside Farm Co., Ft. Wayne, Ind.

Bull 2 and under 3—First to Harwick 14621, owned by Brookside Farm Co.; second to Governor 18325, owned by E. H. White; third to Chalmers of Highland 16301, owned by E. H. White.

Bull 1 and under 2—First to Max of White Farm 18455, owned by E. H. White; second to Browne 16772, owned by O. H. Swigart; third to Calligula 17230, owned by Brookside Farm Co.

Bull under 1 year old—First to Scottish Standard 1st 15338, owned by Brookside Farm Co.; second to Scottish Standard 2d 15338, owned by Brookside Farm Co.; third to King Boyd 18654, owned by O. H. Swigart.

Cow 3 years old or over—First to Lady May 11502, owned by O. H. Swigart; second to Sadie Garland 12510, owned by E. H. White; third to Edella of Hambro 12733, owned by Brookside Farm Co.

Heifer 1 and under 2—First to Gentle Annie A. 18417, owned by E. H. White; second to Norma 3d 16192, owned by O. H. Swigart; third to Little Lake 15483, owned by O. H. Swigart.

Heifer 1 and under 2—First to Little Sioux 3d 16094, owned by E. H. White; second to Fairy of Maples 15386, owned by Brookside Farm Co.; second to Hensolos Beauty 19185, owned by O. H. Swigart; third to Muscom N. of White Farm 18921, owned by E. H. White.

Exhibitor's herd—First to O. E. Swigart; second to E. H. White; third to Brookside Farm Co.

Breeders young herd—First to E. H. White; second to Brookside Farm Co. Get of one sire—First to Brookside Farm Co.; second to O. H. Swigart; third to E. H. White.

Produce of one cow—First to O. E. Swigart; second to E. H. White; third to E. H. White.

Champion bull, 2 or over—Premium to Druid of Castlemilk 17064.

Bull under 2 years—Premium to Scottish Standard 1st 15338.

Cow 2 years old or over—Premium to Gentle Annie 18417.

Heifer under 2 years old—Premium to Scottish Princess.

RED POLLED CATTLE.
Bull 3 years old or over—First to Bushnell 4380, owned by Andrew Bros., Cedarville, O.

Bull 2 and under 3—First to Prince Portia 627, second to Josephus 723, owned by J. H. Crowder & Son, Bethany, Ill.

Bull 1 and under 2—First to King, owned by Andrew Bros., Cedarville, O.; second to Palstaff 3d, owned by J. H. Crowder & Son; third to Zyril, owned by J. J. Chambers.

Bull under 1 year old—First to Merino, owned by J. J. Chambers; second to Prince of Sadorus, owned by J. J. Chambers; third to King William, owned by Andrew Bros.

Cow 3 years old or over—First to Beauty 13180, owned by Andrew Bros.; second to Eva, owned by J. H. Crowder & Son; third to Floss 14661, owned by J. J. Chambers.

Heifer 2 and under 3—First to Sapho 17639, owned by J. J. Chambers; second to Red Rose 15897, owned by Andrew Bros.; third to Beauty of Cedarville 14498, owned by Andrew Bros.

Heifer 1 and under 2—First to Dutch Maid 14587, owned by Andrew Bros.; second to Supremacy 2d, owned by J. H. Crowder & Son; third to Money 2d 15589, owned by Andrew Bros.

Heifer under 1 year old—First to Lady Dewdrop, owned by J. J. Chambers; second to Dew 2d, owned by J. H. Crowder & Son; third to Lone, owned by J. J. Chambers.

Exhibitor's herd—First to Andrew Bros.; second to J. J. Chambers; third to J. H. Crowder & Son.

Breeders young herd—First to J. H. Crowder; second to Andrew Bros.; third to J. J. Chambers.

Get of one sire—First to Andrew Bros.; second to J. J. Chambers; third to J. H. Crowder & Son.

Produce of one cow—First to J. J. Chambers; second to Andrew Bros.; third to J. H. Crowder & Son.

The American Royal Cattle Show

Stock Yards, Kansas City, Mo.

October 21 to 26, 1901

\$20,000
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SHORTHORNS
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Double Black

Horseman



C. W. Williams recently purchased six head of trotting-bred horses from Woodburn Farm, all sired by Expedition (2-15), and ranging in age from two to four years.

Emma E., by Allandorf, is a race mare. She couldn't quite make good at Dover in 2:08, but after seeing Louise G. and Helen R. touch that mark she went on and won the fifth, sixth and seventh heats of the 2:10 pace in 2:12, 2:10, 2:10.

The largest horse in the world was sent to the Chicago Union Stock Yards last week by George M. Tegner, El Paso, Ill. The animal is a coal black Shire gelding, six years old, standing 21 1/2 hands, and is of admirable proportions. This monstrous weight, in good condition, upward of 3,000 pounds.

A foreign veterinarian treats summer wounds, so difficult to heal, with tincture of iodine. The skin around the wound is shaved and the ulcer is then painted with iodine night and morning, leaving the parts uncovered. In four or five days a dry scab forms, and cicatrization gradually follows. Another veterinarian while journeying in Algeria, employed almost exclusively iodine in the treatment of harness wounds with the best results. Iodine is an antiseptic and causes hyperinflammation.

"Down with the foul drivers," says "Veritas," in Trotting and Pacing. "This should be the unwritten rule of all judges' stands, and, if observed, there would be fewer collisions and shocking scenes at trotting meetings than are now brought before the spectators of harness racing. Much turf injury is done in the name and ever-ready phrase of 'an unavoidable accident.' The real accidents are so few and far between that they should not rule general cases of collision."

It seems reasonable to think, says the Horse World, that the pacer, Little Boy, that drew a wagon a mile in 2:30, over the Empire City track last week, might be conditioned to pull a sulky a mile in two minutes or better. In his races, this phenomenal pacer has not been a very consistent performer, but he is certainly possessed of a sensational flight of speed. It is said that an effort will be made to put him in the two-minute list during the coming meeting at Memphis, Tenn.

J. Crouch & Son, of the Lafayette Stock Farm, Lafayette, Ind., were prominent winners in the show ring at the Indiana State Fair last week. Their German coach horses, of which they are heavy holders, are the highest types of the breed, and it was seldom, indeed, that a Lafayette Stock Farm animal was returned from the show ring without a ribbon. The Messrs. Crouch are the largest importers in this country of German coach horses, and the quality of their stock argues strongly that they import only the best.

W. W. Estill of Lexington, Ky., recently shipped to Roy Miller, driver for Idle Hour Farm, now at Goshen, N. Y., nine head of youngsters, including a filly by Chimes, dam Alecia Belle, by Liberty Bell; a bay filly by The Tramp, dam May Day, 2:15; stallion by Bow Belle, dam Watanga, by Tennessee Wilkes; colt by Red Chute, dam Tula S., by Jay Bird; two-year-old filly by Baron Wilkes, half sister to a yearling in 2:30; colt by Ashland Wilkes; colt by Royal Byron; colt by Grattan; and a colt by Electric Bell, dam by Red Wilkes.

The famous Woodburn Farm is again before the world with a large batch of promising stock. This time twenty-six head, the lot of Expedition, 2:15, and Alcatraz, 2:16, three and four-year-olds, will be sold. Many of these have trotted the Woodburn track in better than 2:30. They are bred to trot. They are as good as a hot as ever came from the famous farm, and were sold in Woodburn & Shanklin's sale during the Kentucky trotting meeting, Oct. 5-18. Catalogue of 350 head is now ready and will be mailed to any address upon application.

The meeting of Cresceus and The Abbot at Readville, Mass., resulted just as most unbiased horsemen thought it would—in the triumph of Cresceus, says Western Horseman. The winner of the second meeting of the king and the ex-king, both resulting the same; and the best that can be said of The Abbot now is that he is an ex-champion and the second fastest trotter in the world. Cresceus is clearly in a class by himself, and it seems idle to talk about any other trotter now in the fast class beating him. A trotter will appear by name who will lower the present record of the McGregor stallion, but there is clearly nothing in sight that can give him a race to his limit.

Axtell has taken position with the leading sires of the year, says the Horseman. Six of his get have entered the list this season, and in addition he has two new ones in his list of 2:15 performers, the trotting mare Oseman, 2:12, and the pacer Home Circle, 2:13. The last named is a four-year-old and a more pony—possibly the smallest pacer in the world with so fast a record. Home Circle is out of the dam of Planet, 2:04, and won a five heat race at the Cincinnati meeting last Monday. To the credit of Axtell it may be added that of fifty-seven in the list he has sired only five pacers. In addition to this Axtell has two sons that have become sires of speed

this year. Glad Ax, age six, that is the sire of Old Fashion (3), 2:19, and Actell, age 10, sire of Birthday, a three-year-old that won two races in successive days, earning a record of 2:24.

Fred Wilton, 2:09, is fast making a record for himself as a ringer. Early in the season in the Lake Erie Circuit he appeared as Ormus. Up in Michigan last week he raced as Frank Derby and when he turned up on the track at Mass., under the name of Winfield Rose. He is a bay gelding but at Westfield he was chestnut in color, his coat having been bleached. His driver and owner have been expelled, but they keep right on ringing the horse just the same. The only thing that will put a stop to such work is in each case making it a criminal offense to race a horse out of his class or under a false name. If a few of the turf pirates were sent to prison there would be a decided let up in ringing.

"The Horseman" tells of an incident on a western race track, where a green filly showed that she possessed the trotting instinct in an unusual degree. The filly was taking part in her first race and in one of the heats, when near the quarter pole, one of her reins broke and she was running away from the judge. Naturally expect, she settled into a trot, after a short break, and trotted the rest of the mile, winning the heat in 2:24. The filly was sired by Belair, 2:14, brother to Chimes, dam by Lord Russell, brother to Maud S., granddam by George Wilkes. After passing the wire, winning the heat, she referred to the filly showed up, turned round and jogged back to the judges' stand as though nothing had happened.

"Speaking of disappointments, there have been the usual number among the trotters this year," writes "Raymond" in "The Horse World." "May Allen is only one out of a number which have failed to come up to expectations. Metallas, the \$16,000 son of Mambriro King, is one; Iva Dee, the high-priced daughter of Onward, is another. Still another is the Buffaloe gelding Whitewood, that was unplaced at Cincinnati. There are plenty of others that might be mentioned in this category, but these four, although they proved disappointing this year, are really good horses, and all of them are likely to prove good another year. All are known to be fast and game, and by another year they may be ready to go and race consistently and get the money they failed to get this season."

Early in the season there was a great hurrah from the people who believe a pedigree overshadows all the other blood elements about the trotter, Monticola, by Meaton, that took a record of 2:13 about that time, says the Horse World. Meaton, the sire of Monticola, happened to be out of a thoroughbred mare, and a great future was predicted for Monticola, because of the speed of Meaton and the great blood of the thoroughbred dam and giving blood of the season is about over, and still Monticola's record is just 2:13. Just why he did not go on and trot down below 2:12, as those good trotting-bred trotters, Country Jay, 2:10; Neva Simmons, 2:14; Cornelia Belle, 2:10; Chain Shot, 2:10; Dorothy Redmond, 2:10, and a lot of others, has not been stated by those who were trotting him last spring. Perhaps if he had more trotting and less running blood he might have cut more of a figure among the good trotters than he has done.

A new world's trotting record to wag on was made by John A. McKerron, September 21, at the Gentlemen's Driving Club matinee at Cleveland. After making the mile in 2:07, several weeks ago, within three-quarters of a second of Lucille's mark, it was conceded that McKerron had made the mark in danger, the conditions favored McKerron's attempt, as the weather was just right and the track fast, although there was a heavy wind on the back stretch. McKerron showed up well in his work-out miles, and when he came out for the final attempt at four o'clock, he was greeted with cheers. The word was given on the second score. Harry Devereux, the crack driver, drove him. When he went to the quarter in 32 seconds, and to the half in 1:04, there were those who said he would not break the record. The three-quarters was reached in 1:50, and all hope was gone. But Devereux used the whip, and McKerron responded nobly, coming down the stretch with the wind, finishing the mile in 2:06, the quarter in 30 seconds. This beats Lucille's record by a quarter of a second.

A good trainer is as necessary to the success of a stock farm in the production of race winners as is a good sire, and a good lot of brood mares, says the Horse World. The value of a good trainer was shown during the last two weeks when John Hussey with two green performers from the Patchen Wilkes Farm went out and won races in Grand Circuit company, and made the farm from which these performers came, better known by so doing than could have been done in any other manner. With the green trotter Prince Selma, Hussey won an excellent race at Cincinnati, giving him a record of 2:16, and at Terre Haute this week with the green pacer Nathan Straus he won a sensational race, giving that horse a record of 2:09, General Tracy's Marshall Farm, too, came prominently before the public this week at Poughkeepsie, through the efforts of that good trainer, John Dickerson, who won a good race with the four-year-old trotting mare, Adaria, giving her a record of 2:15. The lesson is plain: A good trainer will make a reputation for a stock farm that has been breeding in the right lines.

The decline in colt trotting and even in colt development was most marked in the four or five campaigns previous to 1901. But a few years previously, there had been engagements for the youngsters throughout the Grand Circuit and in fact at all the prominent meetings in the country. Then there came an agitation against the development of colts that amounted to almost a wave of reform, and the material became so limited that associations were unable to offer colt contests without meeting great loss, with the result that this kind of horse sport was practically limited to the three or four futurities that were kept alive. The events of the past few weeks go to show that there has been a marked revival in colt racing interests. At three points on the Grand Circuit interesting racing between 3-year-old trotters took place, but what indicates more clearly the fact that more colts have been in training than for years past is in the increased number of youngsters in the country's new 2:30 list. While it has been the custom, says the Horseman, to wait

for the favorable days of October before asking the youngsters to go for records, the list for 1901 already favorably compares with the completed list of last season, and when colt racing begins in earnest the list will grow into the largest of many years. So far twelve 3-year-olds have taken records this season, headed by Prelatest, 2:19, while last year's complete list numbered sixteen, and honors were divided between Priola and Walnut Hall, both having trotted in 2:29. The 3-year-olds have been busy in all parts of the country; in many instances they have been campaigning most successfully against aged horses.

BLUE BULL NOTES.

L. E. Clement.

Editor RURAL WORLD: Blonda Redwood won third money in the 2:11 class for pacers at Terre Haute. The meeting seemed to furnish honors for Rich Hill. Riley B. won third money in the 2:06 class. Little Squaw, driven by W. F. Ervin, whose home was at Rich Hill when he began driving harness horses, won the eighth class, and a record of 2:08. Only three other mares have ever paced so fast.

The St. Louis mare, Donna McGregor, owned by Dr. Eversol, won in straight heats at Terre Haute, Ind. Herschel added his fourth standard pacer to his list when Tootoo took a record of 2:22 in the third heat at Mineola, L. I., in the 2:25 pace. He has held trotting and four paces.

At St. Joseph, Savannah Maid took record of 2:24, adding the 14th standard performer to the credit of her sire, Norcat, and making Calie H., by Champion Medium, a member of the great brood mare list, she being also the dam of Fletch Driver, 2:17.

Morg G., by Blue Bull 75, dam by Boston, second dam by Yeate's Highlander, was taken from Indiana to Wichita and sold to H. G. Toler, who bred her to Ashland Wilkes and got George Dickson, sire of Jim Dickson, 2:16. She was taken to Kansas by Dr. J. T. Gurley with his horse Silver Tail, by Legal Tender 1784, sire of two trotters and one pacer, and the mother of one trotter and three pacers.

According to "Columbus" of the "Western Horseman," Morg G. is still owned by W. E. Campbell of Kiowa, Kas. The Transylvania to be trotted this week at Lexington, Ky., was won 11 years ago by the saddle bred Missouri trotting horse McDool, beating the great Allerton, who was second in this race.

Missouri has turned out some great horses among her untraced pacers. McDool, 2:15; Joe He, 2:07; and New Hope, among them. It is the only way yet I found to breed harness speed that is available for racing.

Harold H., by Roadmaster, the fastest of all Canadian bred pacers, made a record of 2:34 at Terre Haute. He started the season with a record of 2:36, and now as if he were eligible to any class open to Joe Patch, son of Joe Patchen. Watch Little Squaw this week at Lexington. It is my opinion she will be in the money, but with Joe Patch, 2:04, in the same race, it hardly seems possible for her to reduce her record from 2:06.

I do not think there is a man driving horses to-day that has two such five-year-olds as Little Squaw, 2:06, and Auley B., 2:06, both in the string of W. F. Ervin.

Mambriro, Jr., in the issue of September 25, speaks of Josie G., out of Madam Buckner, taken by Dr. M. W. Hicks of Keokuk, Ia., to California. Madam Buckner was said to be by Tom Hal, and in the great brood mare list. She is the dam of Viola, by Flaxtail, already a producer.

If Kono, 2:24, is out of Josie G., as the doctor states, the Year Book should be corrected. It gives the dam of Kono as Mishap, by Prodigal, son of Onward, which is right. Madam Buckner has two in the list, one a trotter the other a pacer, both by Sterling, son of Eggmont, one of the stallions Dr. Hickson bred back to Indiana when he returned from California.

George Castle, 2:14, is by Roseberry, 2:15, and Mr. C. H. Gilo of Mason City, Ia., in Western Department of "Horse Review," says he was bred in Missouri and is owned at Keystone Stock Farm, Omaha, Neb. In the report of special Ohio correspondent "The Horseman," September 25, 2:35 class, pacer, pure \$10,000—George Castle, b. g., by Roseberry, dam by Blue Bull, 2:13, 2:13. If this is correct there are five new ones to the credit of the daughters of Blue Bull 75. If George Castle, 2:14, was bred in Missouri, who bred him, and what do they know of the breeding of his dam?

All the horse papers in writing of the meeting at Lexington this week call attention to the Futurity race, always trotted the first day of the meeting, and the Transylvania, the great fixed events of their annual meeting. Missouri should open a Futurity for mares to foal next spring and not less than five good big stakes, one for each sex. We have as good a track as the best, and want to bring out more McDools, and more Hall Freys. Sedalia should be proud of both of these horses. There ought to be plenty of mares in and around Sedalia as Peeewe and the sire of Hall Frey is still at Limestone Valley Farm, one of the greatest bred colts ever sired by Woodward.

Spirit of the West is asking for an Iowa Trotting Horse Breeders' Association to be organized in December. Missouri should see that the harness horse has a place at the great St. Louis Fair, and then that they are provided for in stakes and purses equal to those offered by New York and other states. They do not in the East yet consider that we, even on the west bank of the Mississippi, are in shape to compete with the elite portions. Even as well posted a writer as Allen W. Thompson of Maine, is said to have exclaimed: "What is Alexander Dumas," when his son paced around 2:30 earlier in the season.

Now is the time to work. When will the officers announce a futurity?

THE PAN-AMERICAN HORSE SHOW.

Horses will be shown at the Pan-American Exposition from October 7 to 18. Judging will take place in the Stadium on October 9 and 10. In addition to the usual prizes, Superintendent Converse has succeeded in interesting the various Live Stock Associations and they are offering large special prizes.

The Horse Show is very complete in all classes, from the smallest fancy pony to the heaviest draft stallion ever exhibited. All classes between the two extremes have received especial attention and will prove to be of great interest to horsemen and horsewomen. In refitting the stock yards to accommodate horses, 5,000 feet of lumber was used for the front of the managers alone, which will give some idea of the extent of the preparations that were made. Ten-foot stalls are provided for stallions and 5-foot stalls for other horses.

Like the other Stock Shows, the Horse Show will also have a side exhibit of ranch bronchos, which no doubt will attract a great deal of attention.

ST. LOUIS PARADE.

The purpose of the First Annual Parade of horses and vehicles, used for pleasure, to be held in St. Louis, lies deeper than a mere desire on the part of the city to give horse owners an opportunity to display their turnouts, and the general public the pleasure of reviewing them.

It is intended, in a way, to be educational and to bring about a betterment of civic conditions, as they apply to every person who rides or drives for pleasure, or as a matter of convenience.

The principal object of the parade is to arouse and stimulate interest in the crying need for better streets in St. Louis. There should be a system of driveways in this city from which the heavy hauler can be barred. There should be at least one grand drive with one or more speedways, bridge paths and bicycle tracks connected with it.

The parade is intended to be the opening wedge for more boulevards, and better boulevards, and a magnificent St. Louis in 1908. The horse owners can make their power felt if they will work together. The first step is to demonstrate the strength of their numbers, and wealth. The more fine horses and hand-some turnouts there are in the parade the greater will be the effect.

FALL CARE OF HORSES.

It is an admitted fact that there is a shortage in the supply of good horses in the country, notwithstanding the volume of receipts reported weekly at the wholesale markets. The methods of marketing have been revolutionized within the past decade, says the "Drovers' Journal."

Formerly the bulk of sales were closed by breeders, who consigned to some commission man, but to-day they are closed by the marketing of horses to the hands of professional dealers, who purchase their supplies in the country and close them out to the wholesale trade.

From the day of foaling to the period of selling, horses should have proper attention if the largest profit is to be realized out of the industry. There is no question if the right kind of horses are raised but what the enterprise will prove more valuable than raising sheep or cattle. Yet there is no business that will prove satisfactory unless it has the constant personal attention of the proprietor. The farmer can not achieve success in any branch of agriculture without special effort. Business is not like a clock—day clock—one winds it, and the machinery does the rest. Even the period of foaling is a critical era in consummating success in horse breeding, for the youngster may need more than maternal attention.

The season is now at hand, the most critical in the experience of wintering young horses. If they go into winter quarters in good condition the chances are more than good that they will come out in the spring rugged and strong. Too many farmers neglect the comfort of young horses in the autumn, and the young animals are needlessly exposed to cold rains and sleets with no other protection than a hay or straw stack guard.

In many instances with a barbed wire fence. As winter approaches the sheds and the horse barns should be refitted for the accommodation of the young horses on the farm. The colts should be driven home from the distant pastures that when the cold storms of rain and sleet appear the youngsters may be conveniently near and given dry, comfortable quarters. How many cases of strangles, distempers and pneumonia might be prevented if the horse owners and personal attention on the part of the breeders. An attack of distemper will retard the growth of a colt for six months and perhaps impair its wind permanently. To avert such diseases means the entire profit of the industry. It is not possible to raise the best types of the market horse without adequate shelter and protection from the elements. Stormy weather, which annually visit the horse-breeding districts in the autumn and spring, exposure to which have ruined many valuable young animals.

It is not to be expected that additional clothing other than what nature has provided with shelter from the storms. The parsimonious, starvation and freezing-out process resorted to by many old-time breeders consumed the profits of the industry. Such ragged treatment may have originated the phrase, "survival of the fittest," but is now entirely eliminated from the program of progressive breeders. Experience has demonstrated that generous feeding and comfortable shelter are essential accompaniments to success in this branch of stock husbandry. The high priced animals of the wholesale markets are the horses raised on the modern humanitarian plan of progressive breeders. With the farmer the payment of a mortgage, the sending of the promising son to college, the added comforts of the hearth and home may be indissolubly connected with the profits arising from the sale of the young horses on the farm. A scrupulous care, if properly reared, may develop into a high priced horse than the neglected youngster of aristocratic lineage.

A DISCUSSION OF COLIC.

The veterinary surgeons composing the Central Veterinary Medical Society of Great Britain had a field day recently, when they discussed colic in horses after a good paper on the subject from Mr. Rogerson. The "Scottish Farmer" says the debate brought out many useful points, and some of these may be useful to horsemen. Mr. Rogerson has had a

wide experience of this particular disorder, and his paper introducing the subject was no mere hack production. It bristled with novel observations, and drew out an exceptionally brisk debate. The extent to which colic might be due to excessive watering was one point on which almost every speaker had something to say. Mr. Hunting related the case of a stable in which numerous fatalities from colic had taken place, and after trying numerous expedients it was resolved to let the horses drink all they wanted, with the result that the attacks of colic ceased forthwith.

The view that water-drinking was not the cause of colic was confirmed by Mr. Sampson, who related the case of an omnibus company owning over 400 horses and their plan is to let them drink whenever they like. The company has no more cases of colic than any one else. The general feeling seemed to be that the quality of the water was far more important than the circumstances in which it was drunk. Professor Macquenn said experiments could be quoted proving that it was better to water before, during, or after feeding, but the very variety of the results was a proof that the method had very little to do with the matter; the main thing was to see that the water was clean. This is a common sense, and gradually it is becoming clear that quality and purity are of much greater importance in food and drink than the circumstances under which the diets are partaken of.

Opinions vary among the vets, regarding the best kinds of feeding. Mr. Hunting has seen very large quantities of barley fed to hard-working horses, and his late father, who was one of the first authorities on such questions, was of the opinion that if barley were at a reasonable price it might be used to the extent of one-fourth of the ration. Mr. Sampson, although not personally favoring barley as a safe food, admitted that a client had used it all through one summer, when it was cheap, as the staple food for forty-two horses, and they had remained in excellent condition with perfect immunity from colic. Another speaker denounced the excessive use of chopped stuff, maintaining that horses preferred long hay, and that far too much was given in the way of "chop." Another mentioned that his firm fed eight times a day, and although the frequency seems excessive, the fact is admitted that horses should be fed often. Mr. Forch advocated the mixing of oats with chaff and cut hay, because the two kinds of foods called into exercise different digestive organs, and thus the animals were preserved in better health.

The general summing up of the discussion seems to be that the men had seen most cases, and studied them closely, were least disposed to pretend to know much about the disease. Professor Macquenn seems to think that it is due to a bacillus—Strongylus Armatus—and his arguments on the point seem weighty. Calculi are often the cause of colic, and the smaller ones more so than the larger. The main things to observe in feeding, as preventives of colic, are: To feed frequently, and not to allow long gaps in the bowels for the accumulation of gases, and the facilitating of fermentation; the food must not be too concentrated, but have bulk as well as nutriment; and in respect of watering, the main thing is to have the water thoroughly clean, and it does not matter very much when the animal partakes.

ELEATA AND THE ELECTIONEERS.

Eleata again comes to the front at Hartford, thus showing that she is one of our greatest trotters. But one defeat can be charged up against her—the loss of the \$10,000 Massachusetts Stake at Readville—and the best of them seem to be lost. To feed frequently, and not to allow long gaps in the bowels for the accumulation of gases, and the facilitating of fermentation; the food must not be too concentrated, but have bulk as well as nutriment; and in respect of watering, the main thing is to have the water thoroughly clean, and it does not matter very much when the animal partakes.

Matin Bells, that won the 2:11 pace Friday, is a sister to Boreal, 2:16, the sire of Boralma, 2:07. Boreal was a fast trotter, and a sealer, taking a record of 2:37 at Providence, yet his sister is a natural pacer as is Star Pointer. Bow Belle, the sire of Boreal and Matin Bells, is a brother to Chimes, sire of The Abbot, 2:04; The Monk, 2:06, and so many more of our 2:10 performers. Like Bow Belle, Chimes shows an inclination to get pacers, as witness the phenomenal young stake winner, Shadow Chimes, 2:06, and others in the 2:10 list. Electioneer himself sired but one pacer that was allowed to take a record—Peruvian Bitters, 2:25—yet many Electioneers paced naturally till converted to the trot under ex-Governor Stanford's orders.

As a sire of extreme speed Electioneer stands out prominently with Arion, 2:07; Sunset, 2:06, and Palo Alto, 2:08, to his credit. His daughter, has produced Klatawah, 2:05, as a three-year-old; Dolly Dillon, 2:07, and a granddaughter produced Eleata, 2:08, that was looked upon as a successor to The Abbot, yet died when at his best. Had Nico lived it would have been a battle royal for the trotting championship between them, as the Abbot's form up to that time was about what Nico had shown in his few races.

No sire of trotters has ever accomplished what Electioneer did along the line of begetting early and extreme speed. His progeny have held the trotting record as yearlings, two-year-olds, three-year-olds and four-year-olds; also the all-aged records, both stallion and other sex. Adbell, the present yearling champion, is by a son. Advertiser, Adbell is breeding on as Rowellan, 2:15, as a three-year-old, winner of the Horse Review \$5,000 stake shows. He trotted a half in 1:03, and last quarter in 3:14 seconds at Brighton Beach. When he stood in the East, Electioneer was little used by Mr. Backman and the offer of \$12,500 from Mr. Stanford found ready acceptance. The moment he was tried in California with daughters of General Benton speed came forth at every union.

Probably had his get been persevered with in the East, Electioneer would have been a leading sire. It requires plenty of push, plenty of expenditure to land a speed sire in the front rank among his fellows. Mr. Marvin drew \$10,000 salary for training the young Electioneers at Palo Alto, yet it was money well spent. Annually the overproduct sold for prices aggregating ten times his salary, and the cream of the Electioneers remained at Palo Alto. The Electioneers from old Beautiful Bells alone sold for above \$100,



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600, and they have several of her daughters left at the stud. For Arion Palo Alto received \$125,000 when a two-year-old. This is the highest figure ever paid for a trotter, and shows what can be done after establishing a horse's reputation.

THE PACER MOST POPULAR.

From the passing of the Narragansett pacer in the early part of the last century until 1870, the pacer as an American race horse was considered of no value and no classes were made for him in arranging the programs of the great race meetings of the country. In the last year mentioned a number of sensational lateral-gaited horses were in training, among them being Blind Tom, Mattie Hunter, Lucy and Rowdy Boy. Their performances at the meet meetings in the early part of that year were of so brilliant a character as to attract the attention of race goers everywhere, and certain progressive managers, appreciating the popularity which would inure to their meetings by the unequal performance of these fast, but despised race horses, offered liberal purses for their appearance, and for the first time in a generation this class of horse was recognized as a fit associate of his aristocratic trotting brother. The races in which these pacers participated were the most sensational of that year, and the days when they were to race greater crowds attended than had ever assembled to witness a trotting race in all the history of those associations. The experience of that year demonstrated the fact that the public desires to see speed in harness racing in whatever form it comes, and for that reason the pacer had become a permanent fixture in harness racing. Ever since the gates were opened to the pacer that year he has been a prominent factor in every successful race meeting held in this country. As his popularity began to increase, certain prominent breeders began to deprecate his merits and predict that unless something was done to eliminate this so-called plebeian member from harness racing the great industry would eventually crumble into ruins, and so hysterical did some of the advocates become that they would not have an animal on their breeding farms whose ancestors possessed a strain of pacer blood, but notwithstanding this fusillade of abuse the breeding of harness horses continued and, at frequent intervals, the fastest and most promising racing prospect produced from the trotting nurseries was afflicted with an insane desire to become a great race horse as a lateral-gaited performer, and try as they would the breeders and trainers were unable to disabuse his mind of this improper notion. In his obstinacy he exemplified the old maxim, that "a man convinced against his will is of the same opinion still." The popularity of this once despised horse has increased to such an extent that he is at least an equal favorite with the trotter on the speedway and the race course. That he holds a high place in the estimation of the public was illustrated at the recent Providence meeting, when a large field contested for a purse of \$10,000 before an audience of 15,000, being far the largest gathering ever assembled upon a Rhode Island race course. So well satisfied were the managers with the performances of the horses entered in this important race and their ability to attract the populace, that they have announced a purse of \$20,000 for a 2:10 pacing class in 1902. That General Tracey will derive much consolation from reading the report of the Providence meeting we do not believe, but the pacer will live and prosper in the future as he has in the past without the aid of sympathy of those who consider him an outcast—Rider and Driver.

Chicago, Ill., April 3, 1891. Dr. S. A. Tuttle, Boston, Mass.

Dear Sir: Having tested your Elixir for the different purposes for which you recommend it, would say: We use it on all horses in our department, and I must state that I have not found one instance where I have not received more benefit than advertised. Men as well as horses are using it, and I can not speak in terms of too high praise of it, as I never saw its equal. Yours truly, DR. EUGENE SULLIVAN, In charge of the horses in the Chicago Fire Department.

"Troileum" is the only natural remedy for diseases of horses' feet. Does not exclude moisture, will mix with water, can be used as a dressing in a poultice, or as a hoof packing. 75c a qt., \$2 a gal., at regular dealers. Mfd. by W. F. YOUNG, P. D. F. A MAGIC FOR SWELLINGS, SPLINTS, ETC.

Box 77, Albuquerque, N. M., June 13, 1890. DR. B. J. KENDALL CO. Gentlemen: I am using your Spavin Cure and it acts as a magic for swellings, splints, lameness, etc. Very respectfully, J. B. LUCERD.

Hammer's Sure Cure For Splints, Poll Evil, Ringbone, Spavin, Swellings, Curbs, Warts, Splints, etc. \$1.00 per bottle by mail. I large bottles by express, \$2.00. Money returned if not satisfactory. Send for descriptive circular. Address: H. H. HAMMER, Vermont, Ills.

BEFORE BUYING PIPE

Write us for manufacturers' prices and save money. CARROLL IRON WORKS, 115 Carroll Ave., Chicago.

A MISSOURI EXPERIENCE.

Mr. A. H. Carter of Miller & Carter, wholesale merchants, at Dexter, Mo., writes, Sept. 4: "Enclosed find \$2. Please send two bottles of QUINN'S OINTMENT. Have used QUINN'S OINTMENT only once on a splint the size of a walnut that has come on the leg of my roadster in the last ten days. In 24 hours I was surprised to find it almost gone." This is the general experience of the leading breeders and horsemen who are using QUINN'S OINTMENT. For curbs, splints, spavins, windpuffs and bunches it takes the lead. Price, large size, only \$1, sent by mail prepaid. If you cannot obtain from druggist address W. B. Eddy & Co., Whitehall, N. Y.

Horse Owners! Use



Caustic Balsam A Safe Speedy and Positive Cure. The Best Remedy Ever Used. Takes the place of all liniments for all or severe cases. Removes Blisters or Blistering from Horses and Cattle. SUPERBLY

Home Circle

Written for the RURAL WORLD.
ON DE MISSISSIPPI'S SHO.

Dah's a daisy little cabin sittin' just below de bluff
Whah de Mississippi ben's in 'om de wea'
An' its dah de steep cliffs slopin' to'm a pitchuh will an' rough
Yet ob all de spots on unth I lubs it bes'.

In de mawnin bright an' uhly, to' de fust dawn's in de sky
You can see ouah light shine out across de stream
An' de pickaninies open wide each shinin' little eye
As dey watch dah mammy by de candle's gleam.

When we all hab had ouah breakfast an' de great sun shows his face,
Den I takes my hos and goes down to de co'n.
While de pickaninies scattuh out all round 'bout de place,
An' dey spen' in play de happy hous ob mo'n.

When de sun says "Time for dinuh," shinin' straight between de rows,
I so gladly seeks de cabin's res'ful shade
An' sit down in de open do' whah de wind gently blows,
While de babies tell me how dey've wuk'ed or played.

Often time I goes out fishin' in de pleasant afternoons,
An' takes my boat way up aroun' de ben',
An' I stay until de daylight fades befo' de risin' moon,
Whah we me dat de day hab reached its en'.

Den I drift back down de rivuh, an' my hant fills up wid joy,
As I watch de steamboat lights come round de tuhn,
An' I sing de ole plantation songs I luhnded when but a boy,
Just to let de home folks know ob my return.

When I reach home suppah's waitin', so I stow de ole canoe
An' we gathuh round de table to be fed,
An' when ouah hungh's left us an' de little folks are through,
An' ouah mothuh tucks 'em safely into bed.

Den she comes an' sits beside me on de step outside de do',
Whah I smokes my evenin' pipe beneath de stahs,
An' we watch dah silent brightness wid no sound along de sho'
Save de watch lappin' on de rivuh's ba'ha.

Dah we talk ob past an' present an' ouah tones are hushed an' low,
For de evenin's solemn beauty seems to say,
Dat de moonbeams light de angels on dah jou'neys to an' fro,
From de u'ith to God's great land ob endless day.

When at last ouah eyes grow heavy as if fanned by unseen wings,
An' we're in froo de cabin's open do',
Soon de house an' wrapped in stillness an' de ouah movin' things
Are de yellow moonbeams dancin' on de no'.

Madison Co., Ill. C. C. DAKE.

Written for the RURAL WORLD.
APING.

It takes strength of character to rise above what "others say." All are more or less affected by what "others say." If one regarded as a leader has new furniture or adopts the social fashions, nearly all her friends and neighbors will want to have new furniture or do the latest things that Dame Fashion dictates. If Mrs. Fashionable gets a new hat her friends are prone to think theirs are much out of date, and even when the new hat can't be afforded it is bought lest we be looked down upon. We are sensitive to what others think of us, as to our personal attire or our household furnishings. But the true independence is to get these things only when they can really be afforded, or are needed.

The feeling that we are looked down upon because we are not fashionably dressed or our homes not furnished according to the latest style is frequently the result of our own over sensitive imagination. The fact is that if we are of real worth fashion can't conceal the fact. Then why try to ape?

The effort to be what we are not is easily seen, and we are despised for our hypocrisy. And if any family holds aloof from neighbors because of better clothes and a handsomer home and furnishings a weakness has been displayed that renders such undesirable as friends. Be yourself. Make your character a desirable one, and even if fortune has not smiled on you, you will be honored and loved for that which is not perishable as mere things.

I often think how we ape our neighbors of means, buying some cheap material that resembles the more expensive when for the same money goods which is not quite so fashionable, but of much better quality, might have been obtained. I feel as if we were merely echoes, and that, too, in things of least value. Mere fashion is never an educator of taste and a refiner of our natures. For fashionable things are many times more grotesque and at times positively hideous.

There are customs practiced by people of means that it would be well for us to adopt. Some of these, too, are the ones that we can have without expenditure of money. The one that will help us to bear burdens more cheerfully and take some of the drudgery out of life is the using of flowers more freely in our home decorations. A large pitcher of golden rod, asters, or wild sunflowers will give to any room a look of culture. It can be so artistically arranged that it will show more real refinement and heart culture than a hundred dollar set of parlor furniture. It will show that which money can never buy. I am glad that money has its limitations.

Many farmers and their wives are prone to think a little vase of flowers on the dining table is aping style. Well, if so, that is a good style to ape. The Creator freely distributed the flowers in waste places and we should gather this beauty and with it make bright our homes. Their beauty and fragrance will help us to think better thoughts and take the drudgery out of life. Let us be wise enough to

adopt the best while we are trying to do as others do, and not do only the things which are merely style.
MRS. MARY ANDERSON.
Caldwell Co., Mo.

Written for the RURAL WORLD.
CLIFF REMINISCENT SKETCHES.

The Duel.

On a dark and stormy night many years ago six men were congregated in an old shanty on the outskirts of Cave Hollow, not far from the banks of Rock creek, a stream of considerable size, coursing through a wilderness of brush and timber, engaged in gambling through the medium of cards.

As the game proceeded it was enlivened with frequent potations from a jug on the floor near them, and the staking of sums of money to be lost or won according to the luck in the dealing or skill in playing of the contending parties, and as the hours of night wore on excitement in the game increased and potations from the jug caused a greater abandonment to recklessness.

During the small hours of night a dispute arose between two of the gamblers, in which each accused the other of cheating. The quarrel became more bitter, finally resulted in the word "fight" and blows. One of the men was knocked nearly senseless and all engaged in the fray. The interior of the shanty soon presented a scene of destruction beyond description; battered heads and bloody noses were the rule.

In an interval of less commotion it was decided that the principals should meet the next day and have satisfaction in a duel with revolvers. With this understanding hostilities ceased for the night. After arranging the preliminaries for the day's innovation as best they could in their reckless condition, all sank into a drunken slumber and the sun was far up the eastern horizon when they again awoke to the realities of life.

Towards noon, after deep potations from the jug, they were assembled on a level place not far from the cave; twenty steps were measured off, the two took their positions and at a signal from one of the others fired simultaneously. One of the men was wounded, but neither fell. Again they fired, at the signal, and one fell dead instantly killed. The other, who had been wounded, brought them to a realization of their position and the consequences that might accrue through discovery.

A council was held and immediate action taken. The body was removed to some distance from the scene of the encounter. A hole was excavated with much labor, and the body was deposited in it, covered up and all trace of its location completely obliterated. The men traveled the woods southward, reached the National road near nightfall, separated and departed in different directions. One has since served a term in the pen, one was killed in a drunken row in East St. Louis, and all are dead.

Effingham Co., Ill. DYPE.

TURKISH RICE.

Stew one can of tomato with one small onion cut fine, a sprig of parsley and six pepper corns until very soft. Rub it through a strainer and add water or stock enough to make three cups. Pick over one cup of rice, put it in a strainer, wash and rub it well to thoroughly cleanse the grains, and let cold water run through it until it is clear. Place it directly on the stove in a small saucepan with one cup of boiling water, and cook until the water is absorbed.

Have the three cups of tomato scalding in the double boiler. Add one level teaspoon of salt and the rice, and cover hot water until perfectly soft. It will take an hour or more, as the rice varies in hardness according to its age and the soil in which it is grown. At the last lift the cover and let it dry off, but do not stir it. Add one-fourth cup or two rounded tablespoons of butter, carefully and with as little stirring as possible. Then turn out and serve as a vegetable with roast meat or chicken. Cook the rice partly in the water first subjects it to a great heat, with no danger of burning.

A PIE-MAKING SECRET.

A certain housekeeper announces that she has discovered the secret of having the upper and lower crusts of a pie adhere to each other. "Do not," she says, "grease your pie plates, because it causes the crust to cling to the plate, and becomes sodden, especially in fruit pies. Dry some slices of bread in the oven until they are a light brown, and while the roll them into the dust, but it is in a canister, and use to strew over the bottom of the pie plate; the sides do not require anything. Lay in the bottom crust, trim as usual; then with your fingers push the edge of the crust so that it stands up nearly straight from the edge of the plate, leaving a space between it and the edge of the filling and put on the upper crust, in which plenty of airholes should have been made. Now, with the palms of your hands press the paste up against the rim of the plate with enough force to cut the paste off. Give an upward motion to the hands while doing it and the crust will go on full. Now take the point of a knife and place the upper edge neatly into the space between the lower crust and the plate, and you will have the pie completely covered, as a lid covers a box. With your finger tip softly spread, but do not press, the edge of the pie toward the edge of the plate, and if you have followed the directions you will not take a leaky pie from the oven."

Mothers will find "Mrs. Winslow's Soothing Syrup" the best remedy for Children's Teething.

THE ROYAL MONTH AND ROYAL DISEASE.

Sudden changes of weather are especially trying and probably to none more so than to the scrofulous and consumptive. The progress of scrofula during a normal October is commonly great. We never think of scrofula—its bunches, cutaneous eruptions and wasting of the body—substance without thinking of the great good many sufferers from it have derived from Hood's Sarsaparilla, whose radical and permanent cures of this disease are enough to make it the most famous medicine in the world. There is probably not a city or town where Hood's Sarsaparilla has not proved its merit in more homes than one, in arresting and completely eradicating scrofula, which is almost as serious and as much to be feared as its near relative, consumption.

Individuals may perish, but truth is eternal.—Garrard.

It isn't the Cook's Fault, It isn't your Grocer's Fault,

that the bulk coffee you just purchased turns out to be different from the "same kind" bought before. Coffee purchased in bulk is sure to vary.

The sealed package in which LION COFFEE is sold insures uniform flavor and strength. It also keeps the coffee fresh and insures absolute purity.

Written for the RURAL WORLD.
A NEW FRIEND.

I had been on the sick list for weeks and was so low spirited that I read Mrs. Mary Shaw's letter. Needless to say, that I passed the "Station Despair" in search of the city Hope. Your good letter did me so much good I want to thank you for it, Mary Shaw. Come again.

The last time I went to town a man was tramping along with a big bundle on his back. It was a very hot, windy day, and very dusty. I asked him to ride. My daughter and I filled the seat, but he found room for himself and bundle in the back. When we had gone about two miles, snap went the neckyoke strap, down dropped the wagon tongue. One horse jumped aside and the tugs came loose. But the tramp was at the horses' head and in a few minutes all things were set to rights. When we got to town the tramp led our team up for us. And I guess there were many pleasant remarks exchanged with friends. At least I know we have a pretty girl to wait on us in the postoffice of our little town; for if I am deaf I'm not blind, and that's something to thank God for. I have a good memory, too, and haven't forgotten when my own old man used to tramp it with a bundle on his back and add four cents to the fare. If I do ride in a buggy now, I haven't forgotten when I used to ride on the running gears holding the washing I had done. The lady for whom it was done used to pay me \$2.50 per week, and often gave me a can of tomatoes besides.

The ties that Mrs. Shaw had recourse to in her time of need are useful as well as ornamental, especially the old-fashioned kind, from which a string could be taken and there be plenty left. That incident takes my mind way back to the days of "Auld lang syne." Father and the boys had got their clothes wet. They had to be dried for morning or else they would be required to put on their Sunday-go-to-meetings. The clothes were put round the fire on chairs to dry. We slept and slept until almost suffocated with smoke. I awoke to see father running with the chairs of burning clothes and throwing them into the snow. Water was scarce in those days. We bought it. Well next day we were all lamenting over the loss.

Mother said: "I think a thay gid class 't be burnt!" But father said, "I widna mind th' class, if it was fer my guld country garters. O, the beauty of them!"

Father wore the old country stockings that came above the knee. He would put one end of his treasure in its place, hold it with his thumb while the other hand he would wind it round and round until the other end was reached, which he tucked safely under his armpit, beneath the many surrounding folds which held it safe. No danger of losing it. But now they were lost forever; never could be replaced. Shouldn't wonder but they had been handed down from former generations.

We have had good crops of hay and grain here this year. My husband will soon go to Omaha with best cattle. We sell some here, but ship most of them during the hot weather, especially while the men are working in the hay field. Cholera infantum is often a frequent visitor. A very good cure is wild pepper-mint made into a tea and drank at intervals. We have used nothing else for years. It always cures the patient.

Success to the RURAL WORLD, its writers and editor.
JANE R. HEATON.
Bingham Co., Idaho.

We most cordially welcome Mrs. Heaton. We know that the experiences of a woman of her home, such as must have been Mrs. Heaton's, from the glimpses she has given of her life, will most help her. Most help her. Don't hide them under a bushel or beneath the burden of your own home obligations.

"GO IT, TOM."

Tom belonged to a settlement school and the school had furnished most, if not all, the real happiness he had ever known. Here the good in him was developed until somehow he began to forget the bad.

He was a sturdy little athlete and won most of the races and other contests of strength. Through various winsome traits he had found his way to the heart of the teacher, and she was always interested in his success. One day arrangements had been made for a foot race. Several boys were to run, although everybody was sure that Tom would win.

The preliminaries were settled, the race was started and the boys were off over the course. Tom led clear and free for about half the distance, then to the surprise of every one Johnny began to gain on him. Jim was just behind Johnny and running vigorously. Tom's feet seemed to grow heavy and Johnny steadily decreased the distance between them until finally he shot past Tom, and with a sudden spurt gained fully five yards in advance. Jim was close behind and he too sped over the line a little ahead of Tom, but not enough to give him second place and to leave Tom out of the race.

"Why, Tom, what was the matter?" asked the teacher, as the defeated boy came toward her with tears streaming down his face.

His only answer was a sob. "Tell me what happened, Tom." Tom dug his knuckles into his eyes to dry his tears and tried to tell his story. "I started all right you know—"

"Yes, you led them all." "But when I got half way there the boys began to call, 'Go it, Johnny, you're second.' 'Hustle, Jim, you're gaining.' 'Run, Johnny, run; you're most to him.' But nobody said, 'Go it, Tom,' and somehow it got into my legs and they wouldn't go; and Tom, dropping to the ground in a heap, cried as though his poor heart would break.—The American Boy.

A SPONGE CAKE or plain loaf cake is delicious spread with an apple sweetener. Grate two tart apples and sweeten them with one-half cup of sugar. Fold in the stiffly beaten whites of two eggs and heap upon the cake.

BAMBOOZLING GRANDMA.

"There never was a grandma half so good." He whispered while beside her chair he stood, And laid his rosy cheek, With manner very meek, Against her dear old face in loving mood.

"There never was a nicer grandma born; I know some little boys must be forlorn, Because they're none like you. I wonder what I'd do Without a grandma's kisses night and morn?"

"There never was a dearer grandma, there!" He kissed her, and he smoothed her snow-white hair; Then fixed her ruffled cap, And nestled in her lap, While grandma, smiling, rocked her old armchair.

"When I'm a man what things to you I'll bring; A horse and carriage and a watch and ring. All grandmas are so nice (Just here he kissed her twice). And grandmas give a good boy everything."

Before his dear old grandma could reply This boy looked up, and, with a roguish eye, Then whispered in her ear That nobody might hear: "Say, grandma, have you any more mince pie?" —Nebraska State Journal.

Written for the RURAL WORLD.
CAKE RECIPE.

The ingredients are 1½ teaspoonfuls of granulated sugar, 1 teaspoonful butter, 1 teaspoonful sour milk, ½ teaspoonful soda, two large eggs, 2 teaspoonfuls Royal baking powder. The way I mix it is to beat the butter and sugar together to a cream, add the sour milk then add four cups of the dough will pile up slightly when it is dropped from the spoon back into the vessel. Beat well. Beat the eggs to a froth separately, then gently fold them into the dough, stir but do not beat. Lastly add the baking powder and soda by dropping them carefully on the dough at the side of the vessel. Stir them into a small portion of dough with the handle of a spoon until you are sure they are dissolved. Then take the larger spoon and mix through the dough. Never beat after eggs are added, as that tends to toughen the cake.

PEARL M.
Barry Co., Mo.

SIMPLE REMEDIES.

A well-known physician uses soft lard and flour in the form of a plaster for pneumonia. To half a cup of the lard in flour sufficient to spread easily. Put this on a piece of thin muslin and place on the chest, allowing it to come well down over the bowels.

For a felon, as soon as it is discovered (take one teaspoonful of carbolic acid to ten of water as hot as can possibly be borne. Soak the felon in this ten minutes or more at a time, three or four times a day. Then poultice with flaxseed.

When troubled with constipation or in severe cases where other agents fail, injections of glycerine and water, one part to ten, will be found efficacious. A few drops of glycerine in cold water will stop hiccoughs. A teaspoonful of glycerine, added to the juice of a lemon, with a little sugar and the white of an egg, will relieve hoarseness.

For piles an ointment of vaseline, two parts, powdered alum, one part, often brings relief.

TOTS AT PLAY.

Wordsworth's lines of a child at play, "as if his whole vocabulary were endless imitation," were recently recalled by a conversation overheard in the children's ward at a provincial hospital.

A little girl, whose role was that of nurse, rang an imaginary telephone on the wall to talk to her companion at the farther end of the room, who played the part of doctor.

"Hello!" said the nurse, "is that the doctor?" "Yes," answered her companion in a deep voice, "this is the doctor."

"This lady is very ill," he was informed. "Well, what seems to be the matter?" "She has swallowed a whole bottle of ink," said the nurse.

The doctor, not flurried, inquired what had been done for the patient; but the nurse, too, was ready in emergencies. She answered: "I gave her two pads of blotting paper!"—London Tit-Bits.

A great many women are subject to spells of dizziness, spots before the eyes, and a ringing noise in the head. These symptoms are commonly associated with liver trouble, as the result of a diseased condition of the stomach and other organs of digestion and nutrition.

Dr. Pierce's Golden Medical Discovery cures diseases of the stomach and the allied organs of digestion and nutrition. It cures through the stomach diseases which result from a diseased condition of the stomach and digestive and nutritive system. Hence, cures of heart, lungs, liver, kidneys, and other organs are constantly effected by the use of Dr. Pierce's Golden Medical Discovery.

There is no alcohol in the "Discovery" and it is free from opium, cocaine, and all other narcotics. Some dealers may offer a substitute as "just as good" as Dr. Pierce's Golden Medical Discovery. There's more profit in medicine than in anything else. There's more health in the "Discovery" for you. Don't be imposed on. It is with the greatest pleasure I write you the benefit my mother has received from your "Golden Medical Discovery." My mother, Mrs. Johnson, of Lowville, Amherst Co., Virginia, she suffered untold misery with uterine disease and nervousness, and had a constant tearing and ringing noise in her head. After taking six bottles of Dr. Pierce's Golden Medical Discovery she was entirely cured.

When a laxative is required use Dr. Pierce's Pleasant Pellets.

Poultry

A POULTRY AND PET STOCK SHOW will be held by the St. Clair County Poultry Association at Belleville, Ill., January 15-19, 1902. The association is arranging for a great show. C. H. Emery of Carthage, Mo., will be the judge.

GRAND RIVER VALLEY POULTRY AND PET STOCK ASSOCIATION.

Editor RURAL WORLD: Our second annual exhibition will be held at King City, Mo., December 9-14, 1901. C. H. Rhodes will be the judge. We have a fine list of specialists, a strong association and everything points to a large and successful show. Premium list will be sent free on application. R. R. FRENCH, Secretary.

GREEN CUT BONE.

Science and Practice Unite to Commend Its Use for Poultry Food.

Editor RURAL WORLD: Let not the farmer fool himself into the belief that balanced rations are only needed by the fancier for his yarded fowls. I have had much practical experience, with hens on free range at our own farm, and with flocks put out to farmers, and I am forced to this conclusion, that where 40 or more are kept the use of cut bone—one ounce to the hen, given in the mash, so the biggest ones can't get it all—will pay well. If only a dozen or so of fowls are kept, it must be given during winter if a very good feed is desired. It is a life, nature's supply of animal food, is hibernating almost five months and at other times is insufficient for large flocks. Expert poultry specialists have long since recognized the economy and necessity of this nitrogenous food.

Eggs, according to Atwater, are composed of shell (carbonate of lime), 12 per cent; water, 52; protein, 13, and fat, 12 per cent. Milk is 7 parts water, 4 parts protein and 4 parts fat.

Would it not be just as reasonable for the farmer to refuse his mason anything but water and sand for stone work, simply because such could be had on his farm, as to look for satisfactory egg and milk production from stock to which only a very small part of the essential ingredients of such products has been furnished? Animals can no more make something out of nothing than can man. Is the lack of material any the less real because the animals can't make it known in words? Still their mute appeal can be seen and heard by those versed in nature's lore. No wonder turkeys grow so fast. Grasshoppers and worms on which they forage are times more protein, comparatively speaking, than do the worms of our mixed feeds. A narrow (nitrogenous) ration is therefore not merely the gospel of science, but that of nature and good practice as well.

Since the proportion of carbohydrates in eggs (counting one part of fat worth two and a half parts of carbohydrates), is 39 ounces to 15 of protein (nitrogenous substances), how can a suitable feed be mixed from grains alone when the richest grain, oats, allows just 13 ounces of flesh to 72 of fat forming elements? A hen confined to oats and water with even plenty of green stuff would, if fed up to her capacity, either waste much valuable food or (especially if she be of a large breed and not vigorously exercised), accumulate a surplus of fat sufficient to keep her from laying well for many months. Most farm hens get corn exclusively. Its ratio of fat to flesh forms contents of these desirable albumenoid (nitrogenous) elements. The objection to them lies in their being high priced and very unpalatable to fowls.

Not only is it necessary for most profitable results that our feeds carry the large amount of protein, but, as proven by figures and facts quoted below from a series of accurate and unprejudiced experiments at the New York experiment station, not less than 50 per cent of this protein should come from animal sources:

The ration in which half of the flesh formers was had in cut bone produced 4.25 per cent of fat in 12 weeks at a cost of 4.25 cents a pound; the other, in which vegetable products were used, i. e., grains, meals, etc., made a pound of increase for 5.19c. During the next eight weeks the difference in favor of cut bone mixture was still greater, viz., 7.5 to 11.2c. Furthermore it was discovered that bone fed chicks and ducks reached a given weight sooner; also showed better health and lower death rate.

Get fresh bone with all the lean meat adhering you can; if there is a large quantity of fat, scrape it off; such will only increase the carbohydrates already in excess.

Satisfactory and cheap machines are now on the market which will shave, not grind, it up so small that chicks can eat it easily. The mineral matter in the bone acts as a grit till dissolved in making egg shells and bone.

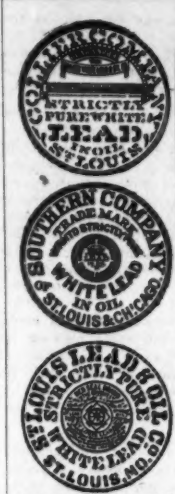
No other source furnishes protein so cheap, so easy to be had, so acceptable to your birds or so nearly approaching the way nature stores it for them as green cut bone.

"MAPLEHURST." Russellville, Tenn.

THE PAN-AMERICAN PIGEON SHOW.

In connection with the great poultry show at the Pan-American, pigeons form a very important feature. The pigeons will be on the grounds six days from the 21st to the 26th of October. The pigeons and poultry have been left until the very last to permit the different birds to gain their full plumage after the usual fall moulting period. Four hundred and sixty classes are provided in the pigeon exhibit, which is said to be the greatest number of any premiums have been offered at any show in the history of the business.

Fifteen judges have been appointed to award the prizes in the different pigeon classifications. Every one of these men has been selected for his well known ability as pigeon judge and all are fanciers of many years' standing. It may be interesting to the general public to know that the letters in addition to the regular prizes denote a special mention as follows: V. H. C.—Very Highly Commended; H. C.—Highly Commended; C. C.—Committed. Premiums to be paid in each class where there are four or more entries are \$3 to the first, \$1.50 to the second, and 75 cents to the third. No other show has ever offered such liberal premiums for the nominal entry fee of 50 cents. Pigeons from Canada have the additional advantage of having their entry free and express charges paid by the



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Canadian government on all exhibits approved by the Canadian Live Stock Committee.

The New York State Live Stock Commission have offered \$5,000 to be divided as premiums in the live stock department.

Poultry and pigeons will come in for a share of this, which will mean practically double the prize money as mentioned above, with no additional entry fee. This of course is open only to New York state exhibitors and fanciers residing in this state. The honor of being represented at the Pan-American Exposition will appeal to fanciers in stronger terms than the mere prize money. To win any mention whatever at an exhibit that is being planned and carried out on such a scale as the Pan-American pigeon show, is to receive considerable honor that will in the future be mentioned with pardonable pride and will be referred back to in years to come as a red letter period in pigeon life.

OVERPRODUCTION OF POULTRY.

Overproduction of poultry and eggs is a possibility, but that such has at any time occurred is doubtful. The fear that the market may be overstocked has deferred some from venturing largely in poultry, but such fears have never been realized. It is not unusual to find the market full at times not only of poultry and eggs, but of all kinds of produce, though there is a great difference in quality. It has been said of butter that there was no intermediate kind, as butter was either good or bad. If not of the best quality it was of no value, and if but little inferior to the best there was no place for it what ever. Such may be said of eggs also, and it may be extended to poultry, says the "Texas Stockman and Farmer."

Quality regulates the prices. A difference of only a cent a pound on poultry or a dozen eggs seems insignificant, but when a large business is conducted the difference is great. As long as there are several prices for the products the market is overstocked with the lowest priced articles only. The best will be in demand and will sell for all that it is worth, but the term "best" means a great deal, for it includes everything pertaining to superiority. There is a large field open for those who aim to supply the market with the best, and every season they will find that they have room for improvement in order to excel.

A HANDSOME, HELPFUL BOOK.

"More Money From Your Hens" is the title of a new book issued by the Stratton Mfg. Co. of Erie, Pa., manufacturers of the well known line of Dandy Green Bone Cutters. It is attractively printed in two colors, well illustrated, and goes into the question of making poultry profitable, in a very thorough manner. Of course it places special emphasis on the value of freshly cut green bone as an egg producer and growth promoter. There is no doubt in the minds of poultry raisers that a little green bone added to the feeding ration is productive of the very best results in two ways; it not only saves in the grain bill, an important feature in the fall when grain is high, but it also makes the poultry more productive in every way. It is a double-headed money-maker.

The "Dandy" Bone Cutter has been on the market a number of years with increasing popularity. It has an automatic feeding device, is strongly and substantially built, has a large cutting capacity, and we know that numerous of our readers have demonstrated that it is satisfactory machine in every way. You will be interested in the handsome book which they send free.

One cannot look at scaly legs without a feeling of disgust, and a thought that it is not, to say the least, an evidence of neatness. Good breeders buy from such stock with reluctance. It is a fact that chickens reared with a hen so diseased will become the same way themselves. Four or five applications of kerosene will kill the minute parasites.—Western Fruit Grower.

Rocky Hill Poultry Farm has for sale Barry's White and Buff Wyandottes, Bronze Turkeys and Pekin Ducks. Good breeders and show birds at very low prices for quality. Satisfaction or money back. Stock ready to ship. JOHN A. SHAW, McKittick, Mo.</

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Cures Coughs, Colds, Sore Throat, Croup, Diphtheria, Rheumatism and all Winter complaints. It

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26 registered Shropshire bucks from one to three years old, mostly 2 years; 20 buck lambs, would sell 48 registered ewes; reduction made on five or more to one buyer. Low down. Address

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Why not remove the worms and save your sheep and lambs? **EXCELSIOR WORM POWDER**, will do this and save you many dollars' worth of stock. Price 75c per lb. with liberal discount to agents. Send for our booklet, it contains much valuable information. **BLAKE BROS., BOX 8, Galesburg, Michigan**

SHROPSHIRE RAMS,

all yearlings, for sale; also my stud ram for sale or trade for any good.

Address L. S. JONES, Towanda, Ill.

COTSWOLD SHEEP FOR SALE

Bucks and ewes, home and Canada bred; all registered and for sale at reasonable prices. Write, no trouble to answer. **H. D. BURROUGHS, R. F. D. 2, Carrollton, Illinois**

MERINOS—American and Delaine.

Greatest World's Fair Winners. Best purpose sheep. 100 lbs. bred ewes, when 18 to 20 lbs. at \$5.00 for quick sale. Extra rams. **L. E. SHATTUCK, Stansbury, Mo.**

South Down Rams and Berkshire Pigs.

Either sex. Individual merit and clover breeding my motto. Stock sold worth the price. Call on or address **C. A. McCUE, Axtass, Mo.**

HAMPSHIRE SHEEP

Oldest flock in the state, choice rams, ewes and lambs at bargain. Address **J. M. TUNNEY, Shelbyville, Mo. Box 144**

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LARGE ENGLISH BERKSHIRES—\$5.00 buys a pig of the best strain, best of breeding. **P. R. CHICKEN, White Plains, Mo. GEO. W. MCINTOSH, Monett, Mo.**

POLAND-CHINAS.

POLAND CHINAS—We have some extra fancy gilts of 100 lbs., and some fancy pigs of both sex of full farrow to offer the trade. They are perfect color and color, bred by U. S. Chief of Police, U. S. P. I. Know, Prince of Wales and Marks Winchester. Price, \$10 to \$15; money refunded if stock is not satisfactory. **L. A. Spies Breeding Co., St. Jacob, Illinois**

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Breeders of the best strains of Poland-China hogs. Registered Jersey cattle and Plymouth Rock chickens. Young stock for sale at all times.

FOR SALE

A nice lot of fall pigs, bred by Miss. sours' Black U. S. 15, 17, 18, 19, and C. Perfection dams are Look Me Over and B. U. S. breeding. Eggs for setting from best strains of P. R. chickens; also bred Maryland cattle. Prices reasonable. **Huntsville, Randolph Co., Mo.**

POLAND-CHINAS.

Growthy, heavy-boned, March and April born and sows, bred by Chm. Kings U. S. 1490, and out of gilt-edged dams; also Angus cattle. **J. P. BISHOP, Box 13, Melville, Illinois (Near St. Louis)**

WALNUT VALLEY FARM HERD

of Poland-China sows. Spring pigs at \$10.00 each of leading strains. Customers are cordially invited to inspect stock before buying. **ERNEST W. WALLEN, Monett, Mo.**

POLAND-CHINAS

Gilt-edged pedigree, bred by Chm. Kings U. S. 1490, and out of gilt-edged dams; also Angus cattle. **J. P. BISHOP, Box 13, Melville, Illinois (Near St. Louis)**

DUROC-JERSEYS.

Choice young stock for sale. Address **R. S. THOMAS, R. F. D. No. 4, Carthage, Mo.**

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A few gilts and male sows for sale at reasonable prices. **Lewis W. Hunsinger, East Alton, Ill.**

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by simply O. K., 1st prize yearling boar Mo. State Fair '91. and other great boars. Write your wants and come and see them. **JOHN L. CLARK, Bolivar, Mo.**

ANGORA GOATS FOR SALE!

I have about 800 recorded, high class and medium class does and a few old fashioned goats that I will sell at a reasonable price. I am in a position to fill any orders satisfactorily from any standpoint. Address **W. T. MCINTIRE, Agent, Kansas City Stock Yards, Kansas City, Mo.**

FINE BERKSHIRES

Of the best families at farmers' prices. Write for what you want, or, what is better, come and inspect the stock. **W. H. KER, Prairie du Rocher, Ill.**

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Breeder of registered Shropshire sheep, Poland China Hogs and Shorthorn cattle. Also Mammoth Pigeons, Turkeys and Banded Rock Chickens. **BUNCEON, MO.**

The Pig Pen**AUTUMN FEEDING.**

When a starving man is taken out of a boat in midocean he is hungry. The folk who rescue him have abundance of food and wealth and sympathy, but they have some food and proper amount of common sense resulting from experience. The hungry man does not possess this common sense; he would gorge himself if allowed to do so. The rescuers are kind folk, but they seem cruel when out of their abundance they allow him but a meager meal, says the "Farmer's Friend." They know, however, that "full feeding" would injure the starving man—experience has taught them the necessity and advantages of "going slow." Is not this somewhat akin to circumstances and facts attending the fall feeding of swine? This year there are many hungry hogs. They have fared sparingly for months, but rescuing rains came lately and food has been furnished at the later day when hope had about vanished in many localities. The hog would naturally "hog" himself if allowed to get at all the food his appetite could dispose of, but it would be all unsafe for the hog to gorge himself as for the starved sailor man suddenly surrounded with plenty. And yet there will be lots of this dangerous "stuffing" with corn feed this fall. It is the process of ruining hogs that goes on unchecked every fall.

In average years when corn is plentiful it is followed worse than will be the case this autumn, when corn in many districts is somewhat of a luxury. But despite the fact that corn is scarce there is doubtless some feed that the owner of hogs will feel that he can now spare in large quantities to make up for the lack of food during the dry months when pastures were withered and other foods scarce and high priced. Such food will give by far the best results if it is fed in small quantities at first and gradually increased in amount after the swine become accustomed to it. At the same time the best results are to be had each year when the corn is balanced with other rations to make a complete food for the young hogs. They require all the constituents of food that go to form bone and blood and muscle. If they are given all the young corn they can eat the first result will be to set up indigestion and where this takes place the pig does not give the desired gain of weight daily. If the corn does not cause indigestion and the hog commences to assimilate it thoroughly and consequently put on weight fast that is no proof that the corn is doing the work expected of it. It is making lots of fat before the young animal has a frame to carry the weight safely, and the result in many cases is that the bones being weak the legs "give" at the ground and the pig walks upon its pastern joints.

If, on the other hand, the hog be gradually accustomed to the abundant food supply of fall and the corn be mixed with a due proportion of nitrogenous food such as skim milk, ground middlings, barley, oats, bran oil meal or any of the other grain products and products along with clover hay, there will be produced a healthy, normally strong and fully developed frame and supply of muscle and blood which will enable the animal to lay on fat later on without sickness or accident.

We are fully convinced that when the pig is kept growing from weaning time to time the feeding there need be no appearance of fat about it. The main thing is to encourage the growth of frame, large digestive organs, fully exercised lungs, ample supply of healthy blood and disposition to hustle rather than loaf and sleep. Given this kind of young hog as the result of judicious fall feeding and there is little difficulty or danger in placing it later upon a full feed of corn and it is this kind of hog that returns the largest return of gain for amount of food consumed.

We must be excused for drumming this advice into the young beginners so persistently, but we shall continue to do so until the idea becomes generally accepted as correct. Already the results of the discussion of this subject of hog growing and feeding along sensible lines are seen in the general interest taken in the publications of the various agricultural experiment stations regarding swine-experiments which a few years ago were apt to be considered needless and uninteresting. It has also led to a general inquiry regarding the improvement of brood sows and methods by which litters may be increased and more milk furnished for their nourishment.

BUTTERMILK FOR HOGS.

At the Wisconsin Experiment Station the writer some years ago, conducted 19 different feeding trials with cornmeal and skim milk in various proportions to determine the relative feeding value of the two substances. It was found that five pounds of skim milk were worth one pound of corn meal for feeding, growing and fattening hogs. For fattening young good wheat middlings are worth about 10 per cent more than corn. The Massachusetts Experiment Station has shown that buttermilk is worth as much as skim milk for feeding pigs. From these data it will not take our readers long to ascertain that 25 per cent is too high a price to pay for buttermilk so long as they can get good heavy middlings for \$12 per ton.

The above statement hardly covers the whole case in pig feeding matters. Often the feeder must supply variety in feeding stuffs, and the question of digestibility,

furnishing bone and muscle building material, etc., is of great importance. While five pounds of skim milk may be worth no more than a pound of corn meal for making gains with hogs, that amount of milk may be much more useful in a certain way. Pigs must have bone and muscle elements in their feeds, and corn meal does not supply this to the amount required. On the other hand, middlings are one of the best substitutes for milk, for the reason that they are rich in mineral matter as well as protein. In the absence of buttermilk one can get along very well in feeding growing pigs a mixture consisting of two-thirds middlings and one-third cornmeal for very young pigs, changing to half and half as they grow older, and ending with two-thirds corn meal and one-third middlings with fattening animals.—W. A. Henry.

WHAT IS A BREEDER?

To buy a good male hog and some fancy brood sows, mate them, raise their progeny and put it on the market is one thing and to be a breeder is another, and a different thing. Yet men of all classes will call themselves breeders, advertise as such, raise stock from other men's herds and they are styled "breeders." Never was there a more false idea sent before the public. So the question arises, "What is a breeder?" I don't know what definition Webster gives, but I will give you my idea, says L. M. Strader in the "Western Swine Breeder." There are too many men in the business who belong to the class above described. They are in the business for the few dollars they may get from the few or many hogs they have produced, or their sows have produced, and if they reach a good market, whether for pork or breeding purposes, they are perfectly satisfied and go on from year to year in the same old rut, and in ten years they sell a wonderful pile of pork, but they know but little about breeding after all.

In the first place, to be successful in breeding, one must have a natural love for the business; a desire to see a better product than the male and female he has mated. A breeder once said to me, "If one has a male hog that has cost him a fancy price and he has a brood sow that will bring the ideal pig when mated to the male, you cannot value your male too highly." That man is a breeder. I have been on the farm 23 years. Have always raised a few hogs. Have spent about 12 years of that time breeding Poland-Chinas. Have had the satisfaction of putting out male hogs that have proved to be good breeders. I remember distinctly once of making a big mistake. I went to a certain breeder to buy a male hog and picked out two. He priced them to me at \$35 and \$15 respectively. I saw the defect in the cheap hog, but as I was young in the business and had not established much of a reputation, and thought, too, that perhaps he might not transmit the defect, I took the \$15 pig. I never made a great mistake in my life. I could better have paid \$100 for the other hog for as long as I had the blood of that hog on the farm that defect would crop out.

So it takes years of experience to become a successful breeder, even when one has the desire and the qualifications to know what the value of an animal is. I am now breeding the Duroc-Jersey hog exclusively. Have pigs from six of the best herds in America. I claim to be a breeder and expect my mating to "show the stuff" in the future what I call "well-bred stuff," and hope to be able to be of some benefit to the breeding fraternity besides mating and selling a few pigs from some one's herd who has already made them what they are.

To be a breeder in the true sense, one must know what he has and what he is offering. I have seen men who call themselves breeders, and one might pass by almost any time and see from one to a dozen male hogs large enough for service, running with 25 or 30 sows of all ages, yet these men call themselves breeders and write pedigrees. "To the best of their knowledge" are such breeders? They are a disgrace to the profession and a short duration at best. The product of such breeding alone will soon knock a man out, but this is not the point. What about the fellow that has bought one strain of me to mate with something he is sure is what he needs, and when he has paid his money, bred his sows, raised his "scrub" and ruined what he has been for ten or a dozen years building up. What then? He feels like throwing his pedigree to the wind and cursing every man that advertises a hog for sale; marketing his whole herd and quits the business.

I like to deal with men who are ever on the alert and try to make the product of their own mating a little better than their own, and who know what they are doing. His farm is sired by Brother breeders, let us work to the end that will make the Duroc-Jersey the best hog on earth. There is room for improvement, and there is always room at the top. Yours for the improvement of our hog.

SOAKED CORN FOR PIGS.

Our experience in feeding soaked corn has been limited. The first to speak of was last season, when we were obliged to buy corn, and we bought it already shelled, says a correspondent of "Swinebreeding." It is a good idea, as always is during the summer, we placed it to soak from one feed to the next, thinking it better to feed. We fed in troughs, and the soaking kept the pigs from kicking it out of the troughs to any considerable extent. We mixed and soaked oats with the corn and received as good results as if oats had been ground or fed otherwise.

The pigs do not tire of the soaked corn, as we have seen them do on hard, dry corn, and they would leave dry corn, any time to eat the corn that had been soaked. They did not eat any more greedily in this way than otherwise, and seemed to relish the soaking. We think soaked corn a good thing for the pigs, as their power of mastication is found wanting compared to that of the hog. One can notice that a pig grinds dry corn with difficulty. We were pleased with the results and shall continue to soak corn this season. We shall shell all the corn we soak, as we do not think it a good idea to feed soaked ear corn on the ground in the dirt.

If you make mutton the main object put as much wool as possible on the back of the sheep.

If you feed and water stock, it will pay you to write Dr. H. HARRY STEEL WORKS, St. Louis, for their Illustrated Catalog of Feed Cookers, Hog Troughs, Tanks, etc.

FEEDING HOGS ON CLOVER SOD.

On every well managed hog farm clover should be grown in regular three year rotation. While this is the case it gives a clover sod to feed the hogs on in the fall. This is better than a wheat stubble clover for the reason that they injure this young clover by rooting and pulling the plants, writes John Jamison in the "National Stockman." They can do the old sod no injury because it is to be plowed the next spring for a grain crop.

The clover sod is a great advantage to the hogs for the reason that they balance the grain ration, which is nearly always corn, and entirely too heating for best results when fed alone from start to finish. The bite of clover that the hogs can get till it is all killed by freezing is an inducement for them to eat exercise. When the green growing part of the plant is killed they can still work on the roots. In soft weather they will pull many of them and eat them apparently with as much relish as they eat the foliage, and doubtless they are of about equal value with the foliage, as they are rich in bone and muscle forming material. As a rule we have had little trouble with hogs rooting where fed on this kind of a sod. One field we have used this way has a gravelly knoll, which they root first and much more of the field besides. But other fields without the soft loose sandy gravel they root but very little.

I dislike to see feeding hogs get into the habit of rooting because they do too much rooting. When the force of nature is doing the best forming material.

Another advantage in feeding hogs on clover sod is that there is a distribution of manure that cannot be had any other way. And more a field of this kind commends itself to the feeder on account of cleanliness. How much better than a small lot or field that says gets muddy and dirty after light rain. A hog is not disposed to take exercise in a lot where there is no forage, for he has no inducement, but in the clover field it is different. He can find something that will reward him for his exercise in the shape of clover stems and roots. It is now conceded that hogs are more healthy when they have exercise while feeding. A greater per cent of hogs that now go to market as young pigs, their product may be properly termed pork. The young animal must have exercise if kept thrifty. A corn ration tends to laziness and obesity. An albuminoid ration, such as is found in the clover plant, tends to activity, hence another advantage in the use of a clover sod for a feeding ground. A change of feeding ground is an advantage. The every year feeding on clover sod insures an annual change.

The writer has just started feeding on a 12 acre clover sod from which a crop of hay and seed has been removed. A wet spell during the fattening period will hardly be of such continued duration that it will be hard to get a clean feeding place. Portable houses will be taken to the field in time to give them shelter from inclement weather.

AXLINE'S POLAND CHINA SALE.

Leading Sale of the Season on October 21—Sixty Head to be Offered.

Contrary to usual conditions, there are very few pure bred sales listed for this season in Missouri or Kansas. Just why this is true is rather hard to understand. A good many breeders, doubtless, have been unnecessarily and unwarrantably frightened by the long period of drought in sections of these two states, and concluding from conditions in their own townships that the country at large had gone to the dogs, declared off their scheduled auction or trimmed their hogs and sent their hogs to the feeding pens. In numerous cases these breeders have changed their minds and would have held a sale, but their hogs are so poor now—only stags and barrows. The result is a scarcity of pure bred hogs that can be spared. Still other breeders are confident of higher prices for next spring and will carry their stock through the winter.

But whatever the reason, comparatively few sales will be held, at least before the holidays. The principal sale among the Poland-China breeders this fall, and one which will command general attention, is the annual public sale by E. E. Axline of the Axline stock. He will sell 60 head at Oak Grove on Monday, October 22. Mr. Axline has confidence in the market and is willing to trust his stock in the hands of the public. As it is the leading sale of the season, and in fact, about the only one in this section, it should and undoubtedly will be attended by every Poland-China man within shipping distance.

A grand lot of boars and spring and all gilts will be offered of such breeding and quality as will prove attractive to the most fastidious breeder that may come to the sale. There will be 20 spring boars and the same number of spring gilts. These were sired by Mr. Axline's well known boars, R's Perfection 2483 and Chief Eclipsed 2240, and out of sows by E. S. Tom 24 and Chief Perfection 24. R's Perfection sows are sired by Canada 24 2170 and his dam, Look Perfect (58168) was by Look Me Over 5011. Chief Eclipsed 2240, one of the best sons of Missouri's Black Chief, is out of a Humboldt Chief sow. Those who have seen Mr. Axline's stock in previous sales will have no difficulty in forming an idea of the quality of the stock he is offering. Any hog to be sold at this sale, if anything, this fall's offering will be an improvement over that made last January. Besides these 40 spring pigs, 30 head of fall gilts by A's Chief will be offered. These gilts are out of Model Boy or Chief Perfection sows. They will be sold open so that buyers can breed them to their choice of a boar. The entire lot of 60 head is a typical representation of the kind Mr. Axline breeds and is worthy enough to go to any herd in the land. Write to Mr. Axline at Oak Grove, Mo., for catalogs which will be ready October 1.—Hayes Walker in Drovers' Telegram.

SCOURS IN YOUNG PIGS.

Pigs that have this trouble when they first begin to eat are off feed at once and the roots they pull are not nourishment and consequently must be reached through their mother's milk, says J. M. Jamison in "National Stockman." On the advice of S. H. Todd I used copperas for the trouble and found it the shortest out of anything I ever tried. A teaspoonful of this dissolved in a necessary amount of water, say a pint, and mixed with the sow's ration of slop once a day for three or four days have found sufficient to check the scour. No doubt there seem to be danger of recurrence when the pigs again begin to eat, as there is when the sow is limited in her feed till it is checked and then brought to full feed.

The Shepherd**THE PAN-AMERICAN SHEEP SHOW.**

Editor RURAL WORLD: The Sheep Show at the Exposition commenced September 23 and will continue until October 5.

Live stock shows follow each other in rapid succession at the Pan-American these days. The ten acres of live stock buildings are no sooner emptied than they are at once refilled with another set of animals. Saturday and Sunday saw the last of the cattle, while Sunday and Monday ushered in the first of the sheep. Assistant Superintendent Witter gets little time to sleep, not even nights and Sundays, as something is required of him every minute apparently.

Fifty-seven exhibitors are showing about 1,200 sheep and 240 goats. The goats occupy a building by themselves, but there are so many of them they have the appearance of being crowded. They are all of the Angora variety, and as they are strangers in this section of the country, they attract a great deal of attention. Only for their goatly horns and mannerisms they might easily be mistaken for a new breed of sheep. Their wool is long and fine, not unlike in general appearance the fleece of a medium or small sized Leicester ewe. For some unaccountable reason, however, their wool is called hair.

If it, however, breeds of sheep are represented: Cotswold, Leicester, Lincoln, Southdown, Shropshire, Oxford Down, Hampshire, Merino A, Merino B, Delaine Merinos, Rambouillet, Dorset Horn, Cheviot, Tunis, Suffolk and Highland Black Face. In all of these divisions first, second and third prizes will be given, besides high-class decorations for the best flock shown, for the best ram two years or over, and for several other sweepstakes and other classifications.

Merinos, being the only distinctive American sheep, are properly very much at home at the Exposition. They are numerous, too, taken in the whole three classes. Class A is bred for constitution, form, covering and weight of fleece; Class B is bred for form, constitution, covering, density and fineness of fleece; being the types of Merino commonly bred in America. Rambouillet, as well as the Black Top Merinos have also been recognized and they have honored the show with their presence.

Comment is liberally bestowed by visitors when viewing this old-looking breed of sheep. The conservative Vermont breeders are showing the old-fashioned Merinos as nature and the American climate intended them to look. They have had the wool pulled, or rather grown over their eyes, until they can hardly see; their horns have been rolled in curl papers during the successive generations, thus giving them the exact twist necessary to properly emphasize their beauty.

The breed was evidently intended to grow much larger, as their skin is rolled and folded over in various places with unnecessary extravagance. This feature figures both ways, however, as it enables them to turn off a large proportion of leather besides furnishing a good deal more surface to grow wool on. The Merinos are appreciated when it comes to working up the fleece in our woolen mills. Such a fine quality and so much weight of fleece in such a small compass is a wonder in the production of wool. As the Sea Island Cotton compares with the ordinary up-country production, so does the Merino wool compare with the other productions in this line. In comparing the different grades now on exhibition the wonder is that our manufacturers should deem it necessary to import wool of any grade or quality from abroad. The different breeds here represented may be found wool of microscopic fineness and wool the fiber of which is four or five inches in length, with a coarseness sufficient to give it great strength. Between these two grades apparently any variation might be selected, and by a judicious mixture any grade of quality built up. It is only by comparing the different breeds and considering the same in a commercial manufacturing sense, that we can fully realize the importance and great benefit that the careful stockmen of the country are proving themselves to be. Not so many years ago it was necessary for our woolen manufacturers to import a great many different grades in order to turn out the quality and variety of cloth sufficient to successfully compete with imported goods. While we still import certain grades of wool, and probably will continue to do so, it is more in the nature of a luxury than necessity.

SPECIAL FEATURES.

WOOL SHOW.—In connection with the sheep show, Superintendent Converse has installed an exhibit of wool. Foreign countries are contributing to render this feature an important adjunct to the sheep show. South American countries are contributing largely to this wool show, which will increase the interest to growers, importers and farmers generally throughout the country. The classification is broad and liberal and includes almost every grade produced.

Sample fleeces are exhibited from Chili, Costa Rica, Bolivia, Salvador and other Central and South American countries. Argentina alone is showing two hundred samples.

This means a great deal that does not appear on the surface. South American countries are naturally great producers of raw materials. Their pasture lands are reckoned not by the acre, but by square miles. The United States is fast getting to be a formidable nation, which combination of facts and circumstances will in the near future make the main source of the world's food supply to Canada, Mexico, Central and South American countries.

SHEARING AND CLIPPING MACHINERY.—An interesting exhibit in one of the stock buildings is designed to illustrate the latest improved shearing machinery. A platform has been erected about three feet above the floor and a number of machines installed thereon. Some of these machines are operated by electric power, while others are driven by hand. Twenty sheep are brought each morning from the East Buffalo Stock Yards, and some one of these is sheared every half hour during the day. One of the operators claims a speed of one and one-half minutes to take the fleece from an ordinary sheep.

RANGE SHEEP.—Another side issue in connection with the sheep show is a comparison of range sheep from the Canadian northwest territories. These are sent not to represent any special breed, but more as an advertisement of what the rich grasses and vigorous climate of



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the far Northwest will do in the matter of raising sheep without extra feed or artificial protection except in the crudest and simplest form.

It is an interesting fact that twelve years ago the original stock from which these sheep were derived was very small. Thirty-five pounds would come nearer the present weight. Careful breeding has of course had a great deal to do with this increase, but the native pastures and even climate no doubt rendered this phenomenal improvement possible.

HERBERT SHEARER,
Bazaar Building, Pan-American Exposition.

MISSOURI WOOL WINS GOLD MEDAL

Buffalo, N. Y., Oct. 3.—Missouri at the Pan-American Exposition was this afternoon awarded the signal honor of the gold medal for its collective exhibit of wool, together with a special award for its mohair and certificates of honorable mention for each of its wool exhibits. The Missouri wool exhibit was prepared under the direction of Prof. H. J. Waters, dean of the agricultural college at Columbia, who procured from leading wool raisers the largest fleeces that could be obtained last spring. There were 19 boxes in the exhibit, all under glass. The mohair shown was held to be exceptionally fine.

The award of the gold medal is particularly gratifying to Commissioner Garver of the agricultural section, who had charge of the exhibit.

The Missouri farmers who will receive certificates for their part in the exhibit are as follows:

Shrop



Figure 1. The effect of the concentration of the solution on the rate of the reaction.

This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some faint smudges and discoloration, characteristic of old paper. The left edge of the page shows the binding of the book, and the overall tone is a warm, off-white or light beige.



built and equipped with every facility necessary in the conduct of their business. The latest and best of tools employed; the working force is made up of the most skillful operatives; some of whom have been with the firm for years, and these advantages all go to insure the superiority of the product of this factory.